

FOR THE PEOPLE
FOR EDVCATION
FOR SCIENCE

LIBRARY
OF
THE AMERICAN MUSEUM
OF
NATURAL HISTORY



THE OCEAN, THE SAND BEACH, AND THE SAND DUNES, IPSWICH

Memoirs of the Nuttall Ornithological Club.

54

No. III.

THE BIRDS OF ESSEX COUNTY,
MASSACHUSETTS. 55

BY CHARLES WENDELL TOWNSEND, M. D.

WITH ONE PLATE AND MAP.

CAMBRIDGE, MASS.
PUBLISHED BY THE CLUB.
APRIL, 1905.

CONTENTS

PREFACE	5
CHAPTER I. TOPOGRAPHY AND FAUNAL AREAS	6
CHAPTER II. THE OCEAN AND ITS BIRDS	12
CHAPTER III. THE SAND BEACHES AND THEIR BIRDS	18
CHAPTER IV. THE SAND DUNES AND THEIR BIRDS	30
CHAPTER V. THE SALT MARSHES AND THEIR BIRDS	36
CHAPTER VI. THE FRESH MARSHES AND THEIR BIRDS	43
CHAPTER VII. THE PONDS AND THEIR BIRDS	49
CHAPTER VIII. LIGHTHOUSE RECORDS	53
CHAPTER IX. ORNITHOLOGICAL HISTORY OF ESSEX COUNTY. 1616-1904	60
CHAPTER X. ANNOTATED LIST OF THE BIRDS OF ESSEX COUNTY	74
INTRODUCTION	74
ANNOTATED LIST	77
INTRODUCED SPECIES	315
APOCRYPHAL SPECIES	318
SUMMARY	319
ADDENDA	320
BIBLIOGRAPHY	322
ERRATA	332
INDEX	333

PREFACE.

IN the following pages will be found first, a brief description of Essex County with a general view of its geology, flora, and faunal areas; then follow chapters on the regions and their birds, peculiar to a maritime county, namely, the ocean, the sand beaches, the sand dunes, and the salt marshes. There are also chapters on the fresh marshes and on the ponds and their birds. These are followed by chapters on the records from lighthouses along the coast and on the ornithological history of Essex County.

In the introduction to the Annotated List, the names of many ornithological workers are given who have generously contributed their notes and observations, and to all of these I wish here to express my sincere thanks. Particularly I wish to thank Mr. William Brewster for the use of his collection and for the identification of doubtful specimens; Mr. Walter Deane for many kindnesses and for reviewing the botanical part of this list; Mr. W. A. Jeffries for his own notes and those of his brother, the late Dr. J. A. Jeffries; Mr. J. A. Farley for many valuable records, especially as regards the breeding of birds of prey; Dr. J. C. Phillips for his records from Wenham Lake; Mr. John Robinson and Mr. John H. Sears for their kindness to me in the use of the collection of the Peabody Academy, at Salem; Mr. Ralph Hoffmann for much kindly help and criticism, and Dr. Glover M. Allen for his great assistance in revising manuscript and proof. I am also indebted to him for the map.

I have attempted to make the Annotated List as complete and accurate as possible, and have banished to a doubtful list all birds about which there is the least question. In the case of most of the water birds the annotations are given fully from my own observations not only as to the habits of the birds but also as to their call notes and their recognition in the field, as these birds are so characteristic of a seashore region, and are so often slightly treated in the books. Of the land birds, a few only of the characteristic and interesting ones are treated at any length, such as the Horned Lark, American Crow, Snow Bunting, Lapland Longspur, Ipswich Sparrow, Sharp-tailed Sparrows, the Swallows, and a few others. A Bibliography is given at the end of the memoir.

BOSTON,
November, 1904.

CHAPTER I.

TOPOGRAPHY AND FAUNAL AREAS.

"The forme of the earth here in the superficies of it, is neither too flat in the plainnesse, nor too high in hils, but partakes of both in mediocritie, and fit for pasture, or for plow or meddow ground, as men please to employ it [It] hath water enough, both salt and fresh, the greatest sea in the world, the Atlanticke sea, runs all along the coast there of. . . . Also wee have store of excellent harbours for ships, as at Cape Anne, . . . and at Salem." — HIGGINSON, "*New England's Plantation*," 1630.

ESSEX County is in the northeast corner of Massachusetts, between latitude $42^{\circ} 25'$ and $42^{\circ} 55'$ north, and longitude $70^{\circ} 35'$ and $71^{\circ} 15'$ west. The most southern point is some seven miles north of Boston. The County has a total area of about 500 square miles, and a coast line of about 100 miles. It includes the following cities and towns, thirty-five in all: Amesbury, Andover, Beverly, Boxford, Bradford, Danvers, Essex, Georgetown, Gloucester, Groveland, Hamilton, Haverhill, Ipswich, Lawrence, Lynn, Lynnfield, Manchester, Marblehead, Merrimac, Methuen, Middleton, Nahant, Newbury, Newburyport, North Andover, Peabody, Rockport, Rowley, Salem, Salisbury, Saugus, Swampscott, Topsfield, Wenham, West Newbury. Magnolia lies partly in Gloucester, and partly in Manchester on the coast. Gloucester, Haverhill, Lawrence, Lynn, and Salem each have a population of over 25,000, Lynn having nearly if not quite 70,000 inhabitants. The population of the whole County is about 350,000. Nearly all the towns date back to the early part of the seventeenth century, the oldest, Salem, having been settled in 1628, while Essex was set apart as a shire or county, in 1643.

The County is nearly diamond-shaped, with four almost equal sides. The apex of the diamond is at the junction of the New Hampshire boundary and the coast line. The eastern angle is at the end of Cape Ann, the western nearly on a level with the most southern part of New Hampshire, so that a portion, perhaps a third of the County, is as far north as southern New Hampshire.

To the north of Cape Ann is a series of nearly straight, sandy beaches, interrupted by the mouths of rivers, and backed by sand dunes, extensive salt marshes, and numerous tidal estuaries and creeks. Beginning on the northern border, which is also the boundary of the State from New Hampshire, the

sequence of beaches and rivers is as follows: Salisbury Beach, $3\frac{1}{2}$ miles; Merrimac River; Plum Island Beach, 9 miles; Ipswich River; Ipswich Beach, $3\frac{1}{2}$ miles; Essex River; Coffin's Beach, or Wingærsheek, $1\frac{1}{2}$ miles; Squam River. This last river, with the help of a short canal to Gloucester Harbor, converts Cape Ann into an island projecting out some 12 miles into the Atlantic. The shores of Cape Ann are irregular and rocky, with outlying rocky islands and here and there a small pebbly or sandy beach.

The southern coast of Essex County trends from Cape Ann to the southwest, and differs radically in character from the shore to the north of the Cape. It is bold and rocky, of irregular contour, with several harbors more or less protected, the harbors, namely, of Gloucester, Manchester, Beverly, Salem, Marblehead, and Lynn. There are numerous outlying rocks and rocky islands, and a number of small sandy or pebbly beaches and coves. Nahant projects out into the ocean as a rocky peninsula connected with the mainland by a narrow sand ridge on both sides of which are beaches.

The rocks of this shore are ancient granites and sienites, intersected with many eruptive trap dykes, especially at Nahant, Marblehead, and Cape Ann. Cape Ann itself is one mass of rock, the seat of numerous granite quarries.

There are no extensive salt marshes on this shore except the small portion of the Lynn Marshes that are included within Essex County, and no sand dunes, slight accumulations only of sand occurring behind the beaches, as at Magnolia, Swampscott, and Lynn. Woods and cultivated fields extend in many places to the water's edge. This is the famous "North Shore," and fashion has full sway.

The largest river of the County is the Merrimac River, which flows in a northwesterly direction, nearly parallel with the northern boundary. South of this, and running in a similar direction, is the much smaller Ipswich River, while between the two are the small streams of the Parker and Rowley Rivers, which are chiefly tidal estuaries. The Shawsheen River, a tributary of the Merrimac, flows north through the western part of the County. The Essex, Squam, Bass, and Saugus Rivers are all small and are also chiefly tidal in their character.

The last glacial period has most emphatically set its stamp on Essex County, as is everywhere shown by the glacial grooves and scratches and polished surfaces of the rocks, by the immense numbers of glacial boulders, large and small, by the glacial drift, lateral, terminal, and kettle moraines, eskers, and kames, and by the numerous drumlins. Ship Rock, in Peabody, estimated to weigh 1100 tons, and Agassiz Rock, in Manchester, are famous boulders. Dogtown Commons, on Cape Ann, is an elevated plateau covered with an immense number of boulders of all sizes — a great terminal moraine.

The hills are of typical drumlin formation, circular in form for the most part, or oblong, with their axes running generally northwest and southeast. They are abundantly scattered throughout the County. More than seventy-five are over 200 feet in height, while as many more are between 100 and 200 feet. The highest hills are two in North Andover, each measuring 400 feet above the sea. This is the highest land in the County. The bases of these two hills are 120 to 180 feet above the sea level. A few of the hills are mentioned here with their heights above the sea: on Cape Ann, Pigeon Hill, 180 feet; in Essex, Hog Island, the birthplace of Rufus Choate, 140 feet; in Ipswich, Castle Hill, 140 feet, Heartbreak Hill, 180 feet, Turkey Hill, 240 feet; in Salisbury, Powow Hill, 330 feet; in Amesbury, Beech Hill, 200 feet; in West Newbury, Long Hill, 200 feet; in Groveland, Crane Hill, 234 feet; in Danvers, Asylum Hill, 240 feet; in Andover, Wood Hill, 340 feet, Prospect Hill, 340 feet; in North Andover, Holt's Hill, 400 feet, a long hill, 400 feet; in Georgetown, Bald Pate, 340 feet; in Topsfield, Great Hill, 240 feet. Most of the islands in the salt marshes are drumlins, the lower outlines of which are obscured by the accumulations of the marsh.

As in all glacial regions small lakes and ponds abound, and they are scattered generally throughout the County. There are about 60 of these ponds varying in size from a few rods across up to the largest, which are one or two miles in length. The principal of these are: Wenham Lake, in Wenham and Beverly; Chebacco Lake, in Essex and Hamilton; Kimball's Pond, in Amesbury and Merrimac; Johnson's Pond, in Groveland and Boxford; Lake Cochicwick, in North Andover; Haggett's and Foster's Ponds, in Andover; Billings Pond, in Lynnfield; and the series of ponds in and near the Lynn Woods.

Another feature of the County, also interesting from an ornithological point of view, is the great number of fresh-water swamps, near the ponds and rivers. These were formerly extensions of the ponds or large basins in the river systems, and have become filled with vegetation and sediment since the glacial period. Along the shore at Lynn, Salem, Beverly, Manchester, Rockport, and Ipswich, submerged roots and stumps of forests, and beds of peat and leaf mould have been found, showing subsidence of the land within recent years. There are also evidences in various places of elevation of the land as shown by old shore lines, and areas of sand or sand dunes, as at Turkey Hill, in Ipswich, some distance above sea level.

As in all long inhabited and thickly settled regions, there are no extensive forests, and most of the drumlins are, unless built upon, exposed in all their nakedness, covered only with barren pastures or cultivated fields. The largest areas of forest growth are in Manchester and Essex, the Essex Woods, and in Topsfield, Middleton, Boxford, Lynnfield, and Andover. Here white pine

(*Pinus strobus*), pitch pine (*Pinus rigida*), and hemlock (*Tsuga canadensis*) are to be found. Spruces, the black spruce (*Picea nigra*) only, are nowhere abundant and are generally confined to small swamps in Essex, Middleton, Ipswich, and Hamilton. There are a few sphagnum bogs where larch (*Larix americana*) and white cedar (*Chamaecyparis spheroides*) occur, the latter being not uncommon in Lynnfield. There are no white nor red spruces, nor balsam firs, except introduced specimens.

In the numerous overgrown pastures, the red cedar (*Juniperus virginiana*) and the juniper (*J. communis*, var. *depressa*) abound. In these pastures in Swampscott and Salem the dyer's weed (*Genista tinctoria*), introduced by the early settlers, covers all the ground with its wonderful wealth of yellow blossoms. A characteristic bush in all pastures and also introduced, is the European barberry (*Berberis vulgaris*). Curious apple trees, dwarfed by the constant cropping of cattle so that they spread out only a foot or two above the ground, are common in all old pastures. Occasionally these trees reach such a breadth, that the long neck and tongue of the cow cannot reach the middle, at which point the tree sprouts upwards undisturbed. Apple orchards, many very ancient, are to be found everywhere in the County.

Of the deciduous trees may be mentioned the following: white birch (*Betula populifolia*), most abundant in all old fields; canoe birch (*B. papyrifera*), red birch (*B. nigra*), yellow birch (*B. lutea*), sweet birch (*B. lenta*), much less common; American beech (*Fagus ferruginea*), chestnut (*Castanea dentata*), red oak (*Quercus rubra*), black oak (*Q. velutina*), white oak (*Q. alba*), swamp white oak (*Q. bicolor*), American elm (*Ulmus americana*), butternut (*Juglans cinerea*), shag-bark hickory (*Carya alba*), swamp hickory (*C. amara*), pig-nut hickory (*C. porcina*), white ash (*Fraxinus americana*), red maple (*Acer rubrum*), silver maple (*A. saccharinum*), sugar maple (*A. saccharum*), striped maple (*A. pennsylvanicum*), black locust (*Robinia pseudacacia*), hop hornbeam (*Ostrya virginica*), wild black or rum cherry (*Prunus serotina*).

In the deep woods of Essex and Manchester, as well as on the exposed hillsides of Cape Ann, the mountain laurel (*Kalmia latifolia*) abounds, and the mayflower (*Epigaea repens*) is found in a few places. In the deep swamps of Gloucester is still found the small magnolia (*Magnolia glauca*), from which the settlement of Magnolia takes its name. This southern plant does not occur again north of Long Island. The white cedar (*Chamaecyparis spheroides*) already mentioned, chinquapin oak (*Quercus prinoides*), sassafras (*Sassafras officinale*), and tupelo (*Nyssa sylvatica*), all more or less characteristically southern species, are also found in the County.

On the other hand, there are several stations for the red or Norway pine (*Pinus resinosa*), some of these interesting trees of the North being of con-

siderable size. One I measured near the Ipswich River, in Topsfield, was 52 inches in circumference, four feet from the ground. The black spruce (*Picea nigra*), hobble-bush (*Viburnum alnifolium*), striped maple (*Acer pennsylvanicum*), mountain maple (*A. spicatum*), cowberry (*Vaccinium vitis-idaea*, var. *minus*), round-leaved violet (*Viola rotundifolia*), twin-flower (*Linnaea borealis*), yellow clintonia (*Clintonia borealis*), and three-toothed cinque-foil (*Potentilla tridentata*), all northern species, are also to be found in Essex County. Some fine specimens of canoe birches (*Betula papyrifera*), reminders of the Maine woods, are growing near the Ipswich River. Thus in the flora there are extensions of both the Canadian and the Upper Austral into the Transition zone, the chief zone of the County.

The most characteristic tree of the old towns is the American elm (*Ulmus americana*). Here many are to be seen of great age and exceeding beauty, arching the streets and filling the squares and commons. It was and still is deservedly the most popular tree for street planting in Essex County, and its prevalence in the towns determines to a certain extent their avifauna.

The avifauna as well as the flora of Essex County is chiefly that characteristic of the Transition zone but there are extensions, both from the Upper Austral and from the Canadian zones, of birds that regularly or occasionally breed in the County.

Of the Upper Austral zone there are three representatives that breed regularly, namely, Orchard Oriole, White-eyed Vireo, and Yellow-breasted Chat, and this is the most northern limit of their range except, perhaps, in the case of the White-eyed Vireo, which is stated to breed rarely at Manchester, N. H. The Florida Gallinule has been taken once late in the spring when it was believed to be breeding. The Black-throated Bunting formerly bred in this region, even as lately as 1873. There are also a number of other Austral birds that have been recorded as stragglers within the limits of the County, namely, Royal Tern, American Egret, Little Blue Heron, Yellow-crowned Night Heron, King Rail, Purple Gallinule, American Avocet, Black-necked Stilt, Wilson's Plover, Turkey Vulture, Black Vulture, Swallow-tailed Kite, Barn Owl, Seaside Sparrow, Cardinal, Summer Tanager, Worm-eating Warbler, Mockingbird, Carolina Wren, and Blue-gray Gnatcatcher.

There are a number of birds that regularly breed in the County that may be classed as characteristic of the sub-Canadian zone, namely, Hairy Woodpecker, Olive-sided Flycatcher, Blue-headed Vireo, Nashville Warbler, Blackburnian Warbler, and Hermit Thrush. The Alder Flycatcher, also a breeder here, is sometimes included in this group.

¹ F. W. Batchelder : Proc. Manchester Inst. Arts and Sci., vol. 1, p. 133, 1900.

Of the true Canadian zone there are the following representatives: Canadian Warbler, Winter Wren, Brown Creeper, Red-breasted Nuthatch, and Golden-crowned Kinglet. This extension of breeding birds both from the north and from the south adds to the interest of this region.

As the County is on the seacoast it lies of course in one of the great highways of bird migration, and the region of the ocean, the beaches, the dunes, and the salt marshes all attract their special birds, and will be considered in the following chapters.

CHAPTER II.

THE OCEAN AND ITS BIRDS.

"And having took a view of Ipswich I found it to be situated by a fine River; . . . it issueth forth into a large Bay, (where they fish for Whales.) due east over against the Island of Sholes, a great place of fishing; the Mouth of that River is barr'd."—JOHN DUNTON, "*Letters from New England*," 1686.

THE birds of the ocean can be studied from the shore or from boats. Provided with a good pair of binoculars and a telescope, the observer will find the study of these birds from the shore most fascinating, using the binoculars as the low power with which the field is swept, and the telescope as the high power with which the individual birds are examined. With a little practice, one can easily find and follow a single bird, even on the wing, with a good telescope, and its advantages will well repay the difficulties of its use. From the top of a high sand dune or rock close to the shore, the hours slip by rapidly at this interesting sport. So swiftly do many of the water birds swim and dive, that the water may suddenly be filled with them, where only a few minutes before there were none to be seen.

For some years I have found this use of the telescope of the greatest value, and often am able to make out the colors and exact markings of birds that, even through a pair of strong prismatic binoculars, appear merely as dark silhouettes. In addition to the markings, one can note many of the motions and habits, which are displayed without restraint, owing to the distance of the observer. My telescope is 29 inches long and magnifies 20 diameters. I use it even for birds on the beach. In gradually stalking a bird I sometimes use first the telescope, and on nearer approach, the binoculars, while it sometimes happens that I finally get so near that the binoculars cannot be focussed on the bird, and I watch it almost at my feet with the naked eye. When armed with a telescope, one can approach a bird much more closely than when a gun is the weapon! With the telescope, except for short glimpses, a firm support or rest is very desirable, and a stick can be carried for this purpose.

The bird-watcher on the shores of Essex County often sees the dark heads of the harbor seals (*Phoca vitulina*) raised above the water as they swim by, peering about inquisitively, and sometimes for a moment mistakes them for

waterfowl. The seals collect on the sand bars sometimes to the number of forty or fifty in a herd. Occasionally a whale is seen spouting, generally the finback species (*Balaenoptera physalus*), and on one occasion, November 13, 1904, while watching sea birds from a boat off the end of Cape Ann, I saw a white whale (*Delphinapterus leucas*) show his snowy back several times above the dark waters. The visits of this arctic species are, however, very exceptional. Two other mammals are also not infrequently seen in this coast region: the harbor porpoise or "puffing pig" (*Phocaena phocaena*) and the bottle-nosed dolphin (*Tursiops truncatus*).

Fishing is carried on all along the coast with its necessary accompaniment of "gurry" — fish entrails, oil, and so forth, which attract such sea birds as Shearwaters, Petrels, Gulls, and Terns. The cod (*Gadus morrhua*) and the lobster (*Homarus americanus*) are the chief spoils from these waters. Squid (*Ommastrephes illecebrosus*) are also caught by the fishermen for bait, and are the favorite food of the Shearwaters. During the autumn months from September to early December, great multitudes of herring (*Clupea harengus*) crowd the waters of Ipswich Bay and the tidal estuaries, coming in to spawn. These are pursued both by day and by night with seines and hand-nets. At night the fisherman lights a torch of cotton waste, wet with kerosene oil, in the bow of his boat, and the fish, dazzled and attracted by the light, are scooped up by the barrelful. The dancing lights dot the waterways in the marshes and the waters of the bay. In these months the Gannet is attracted by the same game, and one can often follow the course of a school of herring off the shore by the flocks of Gannets soaring above them and plunging unerringly into their midst.

Although there are no birds belonging to the present group that breed along the coast of Essex County, with the exception of the Black Duck and the Common Tern, yet numerous ocean birds are to be found along the coast at all seasons of the year, even in midsummer. This latter fact may be explained in one or more of the following ways: 1st, the long duration of the migratory periods for waterfowl; 2d, the excursions from nearby rookeries of these strong flyers, even in the breeding season; 3d, the fact that immature and barren birds may spend the entire summer; 4th, the occurrence of cripples remaining after the shooting season; 5th, in the case of the Shearwaters and Wilson's Petrel, the summer here corresponds to their winter or non-breeding season.

The long duration of the migratory period for different species or even for one species of waterfowl is often not appreciated and differs in this respect from that of the land bird migrants, many of which often pass through in a few weeks. This period is longer in the autumn than in the spring, and may extend from early in July to late in December, or even into January. The spring migration, on the other hand, extends from late in February to the middle of June, but many birds that are common in the autumn for several months are generally

seen for but a few weeks in the spring, and in much smaller numbers. A striking instance of this is that of the Scoters, so numerous in the fall in their southern flight, streaming along the coast in multitudes, but represented in the spring by comparatively small flocks. In the spring the Golden Plover and the Lesser Yellow-legs go north by the Mississippi Valley route and are not seen here. Many of the other shore birds that are so common and tarry so long on our shores from early in July to November, are seen going north in but scant numbers during the last two weeks of May.

The appearance of Leach's Petrels in storms near the shore in the latter part of June, or the sudden increase in the number of Herring Gulls at this season to obtain fish thrown up on the beaches, suggests extended excursions from the breeding places of these birds on the nearby coast of Maine. These excursions, although rare in the case of the Petrel, are, I believe, the rule with the strong-flying Gull. This matter will be discussed later in the annotations on the Herring Gull. That numerous immature and a smaller number of adult Herring Gulls pass the summer on the Essex County coast without breeding, is a well known fact. This is also true to a much less extent of the Great Black-backed Gull, of the Scoters, and the Red-breasted Merganser, as well as a number of shore birds. Some of these birds are cripples, surviving from the winter's shooting.

In the country away from the ocean, a stormy day with rain is of course unfavorable for the ornithologist, but such days are often the most interesting at the seashore; many waterfowl are then seen to best advantage, and often only on those days. For example, the Petrels are almost never seen close to the shore except in fogs or in stormy weather. At such times they may be found gleaning the waves close to the beach, now and then actually sweeping over the sand in their graceful, swallow-like flight. The Scoters, Golden-eyes, and Shelldrakes, which during pleasant weather feed off the shore and fly but little, are often to be found restlessly flying close to the beach or over it, and feeding inside the breakers close to the shore. Phalaropes, although also occasionally seen in pleasant weather, are more apt to be found near the shore during storms. Then there is always the possibility of seeing other rare water or shore birds driven in from the outside course.

The Gulls and Terns are seen to the best advantage during violent northeasters, in regard both to numbers and the beauty of their flight as they soar into the teeth of the gale, or gracefully glide and circle before it. The bird-lover, clad in good oilskins and sou'wester, welcomes a fierce storm at the seashore as a day of unusual interest and great possibilities. A disadvantage on these days is the inability to use glasses, but the nearness of the birds partly makes up for this. It is unnecessary to speak of the glories of the sea

itself, the surf and spray and driving scuds of rain or snow, during these storms. Old Ocean is then at his best from the point of view of the man on shore.

In studying the birds from a boat, it is of great advantage to use fish livers and other fish entrails to attract Petrels, Shearwaters, Jaegers, Gulls, and Terns. The throwing overboard of these oily substances from fishing boats often brings close at hand birds of which before there was no sign.

The ocean birds of Essex County that are here only in summer are the Greater and the Sooty Shearwaters and Wilson's Petrel, visitors from their distant breeding places in the southern seas, and the Common Tern which still breeds off the coast on at least one island. The Black Duck in summer generally prefers marshes both salt and fresh, to the sea, although it occasionally alights there. The Shearwaters are rarely to be seen near the land except at the end of Cape Ann, and there generally four or five miles at least from the shore. The Wilson's Petrel, as before remarked, is often seen close to the shore in foggy or stormy weather, on both the sandy and the rocky coasts. In fair weather, unless a great amount of food is thrown over from fishing boats, these birds are only to be seen farther out at sea.

The Herring Gull, although not breeding here, is a conspicuous feature of the ocean region in summer, and, as already explained, there are a number of other Gulls and Ducks to be found throughout this season. The great flocks of Herring Gulls, numbering, even in June and July, sometimes two or three thousand, are chiefly to be found in Ipswich Bay especially about Ipswich and Coffin's Beaches and their outlying sand bars. These birds also alight on the small rocky islands, the Salvages, off the end of Cape Ann. In winter these rocks are often covered with Herring and Great Black-backed Gulls, while the rocks themselves are painted white with their droppings.

During the winter are to be found the Holboell's Grebe and the Horned Grebe, rarely the Pied-billed Grebe, which prefers fresh water; the Loon and the Red-throated Diver, the Puffin, Black Guillemot, Brünnich's Murre, Razor-billed Auk, and Dovekie. The Horned Grebe, the Loon, and the Red-throated Diver are often abundant off the sand beaches, but they also frequent the rocky shores, while the Black Guillemot appears to prefer the rocky shores alone, choosing especially the promontories of Cape Ann, Marblehead, and Nahant. The Puffin, Brünnich's Murre, Razor-billed Auk, and Dovekie also prefer these latter rocky headlands projecting far out into the sea but all at times venture nearer rocky and sandy shores. The Herring Gull, Kittiwake, and Great Black-backed Gull are the common winter Gulls. In the Duck family, the Red-breasted Merganser, the Black Duck,—chiefly the Red-legged subspecies,—Whistler or Golden-eye, Old Squaw, and the three Scoters are all

abundant and characteristic of these waters. A few American Eiders are to be found, but only off the exposed rocky stations. Another winter bird that certainly deserves to be put in the class of birds of the ocean, as with the rarest exceptions it is found while with us on the rocks and rocky islands only off the coast, is the Purple Sandpiper.

During the migrations most of the winter birds are more abundant. In addition, may be seen the Gannets, sometimes in large numbers, making a magnificent spectacle as they bombard the water in their pursuit of fish; also the Double-crested and Common Cormorants, the former in reality by far the more common. These weird birds are sometimes to be seen in considerable numbers flying along the coast or swimming on the water. Again their strange forms can be descried perched on spar buoys or on rocks. Leach's Petrels also pass in the migration to and from their breeding places on the Maine coast and beyond, but are rarely seen. The Red and the Northern Phalaropes may also be included as birds of this ocean region. The three species of Jaegers, the Ring-billed and the Bonaparte's Gulls are also migrants. Of the Terns, the Common, Arctic, Black, and Caspian may be mentioned as regular migrants, omitting a number of Gulls and Terns given in the Annotated List as rare or accidental. As before stated, the Common Tern also breeds here. The Canada Goose and Brant as well as a number of Ducks in addition to those enumerated above, such as the Greater Scaup and Bufflehead, are also to be found in the migrations. The autumnal flight of these birds, particularly of the Scoters, is one of the striking features of this shore.

Duck-shooting off the coast in Essex County is chiefly devoted to the pursuit of the three species of Scoters or Coot as they are called, and is everywhere spoken of as "cooting." During the fall migrations, especially in easterly weather, these birds sometimes pass along the coast in countless numbers. When the wind is strong from the west the birds often keep well outside. The gunners anchor their boats before light in line across the course of the flight, putting out flocks of wooden decoys, and for this purpose crude blocks of wood painted black, are all that is necessary. Sometimes bladders painted black are used. A sharp whistle or loud shout has the effect of deflecting the flock of Scoters down towards the gunner. Gunners generally make a low whistling noise to attract the birds, and the notes of Old Squaws also are imitated when they are seen coming.

On some days in the middle of the season the gunner tosses about in his "dory" for hours without firing a shot. At other times the shooting is fast and furious, but even with the heavy charges and large shot, comparatively few birds are killed, such is their tenacity of life, the swiftness of their flight, and the protective power of their thick coat of feathers. Wounded birds dive at

once, sometimes from the wing, and the pursuit of the cripples, as they are called, is often in vain.

In addition to the Scoters, Red-breasted Mergansers or "Shelldrakes" as they are universally called, and Old Squaws are often shot, and occasionally American Golden-eye Ducks or "Whistlers," and Scaups or "Bluebills," but the two latter generally fight shy of the boats and fly high.

CHAPTER III.

THE SAND BEACHES AND THEIR BIRDS.

"At full of tide their bolder shore
Of sun-bleached sand the waters beat;
At ebb, a smooth and glistening floor
They touched with light, receding feet."

WHITTIER, "*The Tent on the Beach.*"

THE four long sand beaches on the northeastern coast line of the County are favorite resting and feeding places for birds. This is particularly true of Ipswich and Coffin's Beaches which are broad and flat, and are bordered in places by sand bars. The beach at Plum Island is for the most part of a different character, shelving abruptly into deep water.

Although the number of marine invertebrates on beaches is much smaller than on a rocky shore, some live in the sand, and many more—some from deeper water, some from the nearby rocky coasts,—are cast up on the beach, and serve as food for Gulls, Crows, and other birds. A few of the common and important marine invertebrates found on the beaches are the following: finger sponge (*Chalinopsilla oculata*), jelly-fishes (*Aurelia flavidula* and *Cyanea arctica*), under the huge disk of the latter being often found small Crustacea (*Hyperia*). The common clam-worm (*Nereis*) burrows in the beaches but is more abundant in the protected inlets and creeks. Starfishes (*Asterias vulgaris*) and brittle-stars (*Ophiopholis aculeata*) are found commonly among the rhizoids of the *Laminaria*.

The sea-urchin (*Strongylocentrotus dröbachiensis*), an animal washed from rocky stations, is sometimes found, while the sand-dollar (*Echinarachnius parma*) is common near low-water mark, slightly buried in the sand, revealing itself by a circular prominence. The hermit crab (*Pagurus bernhardus*) occupies old snail shells at low-water mark but is more common in the inland creeks. The green crab (*Carcinus maenas*) belongs south of Cape Cod, but it appeared on this coast in 1901 and increased rapidly, not only on the shores, but especially in the estuaries and creeks. The severe winter of 1903-4 has apparently exterminated it here, for none could be found during the following summer. Rock crabs (*Cancer irroratus* and *C. borealis*) abound, especially the

former, off the beaches. This species is found below low-water mark in great numbers and of large size. They are frequently left on the beach by the retreating tide where they burrow in the sand, generally leaving a slight prominence to show their whereabouts, and often a fissure, where their crafty eyes may be seen. Their efforts at concealment are often in vain, for the Herring Gull routs them out, and feasts on the dainty morsels. Beach fleas (*Orchestia agilis* and *Talorchestia longicornis*) abound, the latter high up on the beach, the former between tides. They devour any organic matter that is cast up on the beach, and are in turn devoured by the birds, especially the shore birds, which grow fat on them. The scud (*Gammarus locusta*) is another amphipod of similar functions, swarming in the decaying seaweed. The horseshoe crab (*Limulus polyphemus*), a strange archaic beast, is abundant in the tidal estuaries, but is not uncommonly thrown up on the outside beaches. Here it makes an extraordinary track as it advances, but frequently attempts to wait in safety for the next tide by burrowing in the sand.

Of molluscs, large round snails (*Polinices heros* and *P. duplicata*) are especially abundant, and the strange collar-like sand rings containing their eggs are common. When the animal is advancing over the sand with its foot stretched to the full capacity, one wonders how it will ever force itself into the shell again. This, however, is quickly done, with a great outpouring of water. The Gulls and Crows are particularly fond of these snails. The European periwinkle (*Litorina littorea*) is found everywhere now, and may be called the English Sparrow among molluscs. Then there are also the more delicate native periwinkles (*L. rudis* and *L. palliata*), *Nassa trivittata*, whose pretty and delicate shells often line the beaches, and whelks (*Buccinum undatum*). The edible mussel (*Mytilus edulis*) of Europe abounds in great beds off the beaches and in the estuaries, and is much appreciated by the Ducks and Gulls, but not yet by the native American. The deep-water mussel (*Modiolus modiolus*) is thrown up with attached *Laminaria*. The quohog, our northern little-neck clam (*Cyclas islandica*), and the giant clam (*Spisula solidissima*) inhabit the sand beaches at and below low-water mark, and are often thrown up high on the beach. The razor-fish (*Ensis directus*) is thrown up scantily on the beaches but abounds in the tidal estuaries. The squid (*Ommastrephes illecebrosus*) are sometimes cast up in great numbers on the beaches, or found close to the shore whither they have been chased by fish. The clam (*Mya arenaria*), such an important article of food for man and of bait for fishes in Essex County, occurs in the protected sand- and mudflats away from the open sea.

Then there are numerous bony fishes and sharks whose dead bodies are always to be found on the beaches. At times these occur in thousands, the cod

(*Gadus morrhua*), haddock (*Melanogrammus aeglefinus*), and pollock (*Pollachius virens*) rushing to their doom on the beaches in pursuit of small herring (*Clupea harengus*) which also beach themselves, or to escape the pursuing dog-fishes (*Squalus acanthias*). The dog-fishes in their impetuosity often beach themselves, and I have seen a dozen within a space of a few yards on the sand. This fish has curious spines in front of its dorsal fins that resemble the upper mandibles of Terns' bills.¹ I have sometimes in the evening seen the bony fishes mentioned above feebly flopping on the edge of the beach in the water, apparently anxious to get onto dry land. Besides these fish there are two curious monsters, both of which are frequently cast up by the waves. These are a skate (*Raia*), allied to the sharks, sometimes three or four feet long, and the angler or fishing-frog (*Lophius piscatorius*), a large-headed bony fish.

The fish are eagerly eaten by the Gulls and Crows, although the tough skins of the sharks—dog-fishes and skates—make it necessary to wait until decay has done its work. Innumerable insects, especially beach flies (*Fucellia fucorum*, *Ceclopa frigida*, and others), are attracted by all this carrion, and these in turn bring Swallows and other Passerine birds. Besides the ever-present beach flies, a tiger beetle (*Cicindela hirticollis*) is very common on the beaches, and many insects that have dropped exhausted into the water are thrown up on the shore. This is strikingly the case with the hordes of ants that during the nuptial flights in September sometimes line the beaches in windrows for miles.

The common seaweeds thrown up on the beaches are: sea lettuce (*Ulva lactuca*), rockweed (*Fucus vesiculosus*), red seaweeds (*Rhodophyceæ*), Irish moss (*Chondrus crispus*), and devil's aprons (*Laminaria*). In the root-like attachments of the last-named to mussels and stones are often found small museums of marine invertebrates, all of which are appreciated by birds.

The changing outline of the beaches is always an interesting study. Some twelve years ago a narrow sand spit extended northwest from the beach and parallel to it near the mouth of the Ipswich River. So narrow was this that I have shot over decoys placed at the water's edge on both sides, building my blind in the middle. As this spit extended and broadened, the sea constantly throwing up more sand, and the wind seizing this and blowing it inland, the lagoon which it enclosed was gradually cut off, leaving only a narrow outlet, through which it filled and emptied at each tide. Its shores, being sheltered from the sea, abounded in the common clam (*Mya arenaria*), while only the sea

¹ See C. W. Townsend: "A Case of Mistaken Diagnosis," Auk, vol. 20, p. 218, 1903. A spine of a dog-fish found in a shell heap was identified at Washington as the upper mandible of the Royal Tern! In this connection see Josselyn, "New-England's Rarities," 1672: "The Dog-fish a ravenous Fish, upon whose Back grows a Thorn two or three Inches long, that helps the Toothach, scarifying the Gums therewith."

clam (*Spisula solidissima*) was found outside on the open beach. From a narrow sand spit enclosing a large lagoon, this has become a broad elevated sand plain, and the lagoon, much shrunk in area and depth by the constantly blowing sand, was finally, in 1903, so cut off from the sea that weeks went by without a new supply of salt water, and the clams were in imminent danger of becoming subfossils. In 1904, the lagoon has become but a small stagnant pool, and will soon be entirely obliterated. On this plain of sand, some 300 yards broad, clumps of beach grass have begun to appear, and the blowing sand which collects around them forms the beginning of dunes.

It is interesting to note that old Capt. Ellsworth, the keeper of Ipswich Light up to his death a few years ago, used to say that when he took charge in the sixties, he had talked from the lighthouse with men in boats on the water. The lighthouse is now some 350 yards from the high-water mark, and very much farther from the shore in the direction of the range light. A map of Ipswich dated 1846 shows a much farther extension of Castle Hill to the north with a basswood tree at the foot. Here now is a ragged gravel cliff with numerous boulders at its base. At the mouth of the Essex River on the Ipswich side, the sea is cutting into the dunes exposing sections of wind-deposited strata.

There are many birds that are characteristic of a sandy seabeach, some of which, such as certain of the *Limicolæ* or shore birds, are rarely to be found elsewhere. There are also numerous birds of the ocean that are at home on beaches, such as certain Ducks, Gulls, and Terns. Then there are birds of the marsh that at times frequent the beach, namely, Herons. In addition to this are a number of land birds, that come to the beach, sometimes in large numbers, for the food that is to be found there; these are appropriately named by Dixon "littoral land birds." Of the shore birds it is probable that all may at times alight on the beach, but there are all degrees among them, from those that are almost never seen except on the beach, to those whose appearance there may be considered accidental. This will be noted later under each species, but a few general remarks here may be of interest. Among the Plover, the Black-bellied, Semipalmated, and Piping Plovers are above all birds of the beach, although the first two are occasionally found in the marshes, while the last-named rarely strays from the beach and the adjoining sand dunes. The Golden Plover, although at times found on the wet sands, is much more likely to hunt for food on the dry sands above the highest tides, or still farther inland, while the Killdeer generally avoids the beach altogether, preferring the fields. The occurrence of the Wilson's Snipe, Solitary and Bartramian Sandpipers on the beach would be purely accidental, although I once saw a Bartramian Sandpiper there, and I have found the Solitary Sandpiper at a brackish pool on

the upper beach. The Eskimo Curlew and Buff-breasted Sandpiper are both birds of the hills. Both the Greater and the Lesser Yellow-legs, unless they can find a pool left by the tide away from the surf line, are rarely found on the beach. The same is true of the Pectoral Sandpiper, while the Dowitcher with its long bill, typical of the oozy marsh, is more often than these found on the beach.

The Purple Sandpiper, although a bird of rocky islands, I once found on the beach at Ipswich. The Spotted Sandpiper and Turnstone are both fond of pebbly beaches, but both of these birds, particularly the latter, are also frequenters of the sandy shores. The Spotted Sandpiper, however, much as it loves the wet and muddy places in the marsh, appears to prefer on the beach the dry upper parts, where it finds numerous insects. The Hudsonian Curlew, Willet, White-rumped, Red-backed, and Stilt Sandpipers, and Hudsonian Godwit all frequent the beach, although all may be found in the soft mud sloughs of the marshes as well. The sandy-colored Semipalmated Sandpiper is a frequenter of the beach, while its browner cousin, the Least Sandpiper, decidedly prefers the marsh, but they visit each other's hunting-grounds at times. Of all beach-loving birds I would place the Knot first,—a typical bird of the sandy shores. The Sanderling or Beach-bird, as its names imply, is also a bird typical of the sandy shore, but it occasionally straggles into the sloughs of the marsh.

It not infrequently happens that the beaches abound in shore birds in the late evening, but before daybreak are largely deserted; and although the diurnal migrations of the *Limicola*, with the exception of the Woodcock, Wilson's Snipe, and Spotted Sandpiper, are noticeable, it is evident that all may migrate also by night. The lighthouse observations likewise bear this out.

The Phalaropes are ocean wanderers, but they at times deign to appear like ordinary shore birds walking on the beach. Of other ocean birds the immense flocks of Herring Gulls to be found resting on the beach at Ipswich at all seasons of the year, are most interesting. In the summer when great numbers of dead fish line the beach for miles, the Herring Gulls gather from all about and act the scavenger to good purpose. I have seen a line of these birds at Ipswich extending over 300 measured yards of sand with from 3 to 20 or more in a yard. This means from 2000 to 3000 of the birds at a moderate estimate. From the shelter of the grass or a pile of sticks in the sand dunes one may watch these birds for a long time with interest. If shooting were entirely prohibited in this region the birds would no doubt become as tame and as easily studied as the Western Gull on the beaches at San Francisco. As it is now, our Gulls know the carrying power of a gun and keep well out of range. The other Gulls and Terns commonly frequenting this beach region are the

Great Black-backed Gull, Bonaparte's Gull, and Common Tern. The Ring-billed Gull and Kittiwake, and Arctic, Black, and Caspian Terns are less commonly seen. I once saw a Gannet resting on Ipswich Beach, and on another occasion three Double-crested Cormorants. The former of these birds generally keeps well outside the beaches and the latter prefers to rest on rocks or spar buoys.

Of the Ducks, I have seen the Black Duck, both the smaller and the Red-legged subspecies, the Red-breasted Merganser, and Surf Scoter resting on the beach. Canada Geese and Brant sometimes alight on the beaches during the migrations. The Black Duck, mostly the Red-legged subspecies, frequents the beach in large numbers during the early spring. Masses of from 500 to 1000 or more of these birds closely huddled together present a most interesting sight, and the noise of their wings when they spring into the air is not easily forgotten.

Doubtless the prints of many other Ducks' feet have been made on the sandy beaches of Essex County but the records have been effaced. The study of the marks in the sand is fascinating and many of them are clearly cut and easily interpreted. For example, the wanderings of a flock of Sandpipers are easily traced by the footmarks and by the borings of the bill, except where the lapping waves have obliterated them. The laborious runs of the Herring Gulls on calm days in order to get impetus enough to rise above the ground, are clearly shown, and their methods of alighting are all clear to one who looks.

On disturbing a pair of Shelldrake, or Red-breasted Mergansers, one calm day from their comfortable nap on the beach, I found in the sand-record that they were obliged to stride forward twenty-nine yards before they could push the beach away from them, the claw marks becoming fainter and fainter. Their strides were three feet long and the duck led the drake in the race. In this case they were unable to head for the little wind there was stirring, for I was on their windward side and the ocean was to leeward, so they were doubly handicapped. If the wind had been blowing harder, they would undoubtedly have risen against it,—towards me. The case of the Black Duck is very different. Their leisurely walk with short steps and toes turned in, is easily traced in the sand to where the track ends abruptly as their powerful wings take them straight up. The final footprints are not perceptibly deeper than those that precede, showing that it is their wings and not the push of their feet on which they depend. The prints made by the Cormorants on taking wing show that they push the sand with both feet close together instead of running or striding as do the Mergansers and the Gulls.

The marks of the feet of the Great Blue and the Night Herons are also found and the birds themselves can often be seen. The Green Heron occa-

sionally visits the beach, but I have never found the Bittern there. The Herons prefer a lagoon on the upper part of the beach mostly cut off from the outside sea, but they also frequent the outer beach itself, the Night Herons visiting it at night in large numbers.

Of the land birds the Hawks are perhaps the most interesting. Some of these appear to choose this region especially during the migrations, Fish Hawks, Duck Hawks, and many of the smaller species being often seen there. I have two Duck Hawks in my collection that took advantage of the skill of the sportsman, and pounced down on some hapless shore birds he had just shot, only to be slain in turn, themselves. Occasionally the Hawks swoop at decoys. The Bald Eagle on rare occasions visits the shore and is an imposing sight as he stands on a peaked dune close to the beach. From here he descends to pick up the dead and decaying fish with which the beach is strewn.

Of the Passerine birds, the Crows are to be found on the beach, often in large numbers, at all seasons, sharing with the Herring Gulls the duties of scavengers. They are more common there in winter than in summer, for their range of hunting-ground is more curtailed at that season and the beach is always bountiful in supplying food.

The number of Passerine birds that accidentally alight on the beach may be considerable, but there are only a few that habitually frequent it. These are in summer the Kingbird, Bronzed Grackle, Red-winged Blackbird, Savanna Sparrow, Song Sparrow, Barn, Eave, Bank, and Tree Swallows, and Robin. All of these visit the beach frequently for the abundance of insects to be found just above high-water mark or those attracted by the decomposing fish and seaweed, or for the small crustaceans. All four species of Swallows are abundant, coursing up and down the beaches and occasionally alighting there, not only during the migrating season when they gather in large numbers, but also in the early summer. The Tree and Barn Swallows are the most abundant and next to them is the Eave Swallow. In the autumn come the large flocks of migrating Pipits, which frequently walk on the upper beach.

The winter birds are the Horned Larks and Snow Buntings, which are often found in large flocks close to the water's edge and add greatly to the pleasure of a walk there at that season. The Lapland Longspurs are also to be found, and the Ipswich Sparrow delights in the beach itself, appearing to pick up plenty of food not only on the upper beach, but also on the *débris* cast up by the waves close to the water's edge. On January 24th, 1904, on Ipswich Beach, in the small compass of some ten yards square, I found ten Horned Larks, four Snow Buntings, two Lapland Longspurs, and one Ipswich Sparrow feeding — an interesting collection for a winter's day.

It is interesting to note that, like the *Limicola*, all of these birds walk or run habitually rather than hop, with the sole exception of the Kingbird, which almost never uses its legs for locomotion on the ground. Even the Swallows waddle short distances over the sand, using the legs in succession. Although it is the case that the Savanna and especially the Song Sparrow hop, they also execute a rapid walk or run, while the Ipswich Sparrow is typically a walker.

Before leaving this delightful region, interesting at all seasons and in all weathers, I must speak of two other sources of ornithological interest on the beach. First, the dead birds that are found there shot by man, or cast up by the sea sometimes without sign of injury—some of them sea birds that appear to have died of starvation. My cabinet contains a number of these that have been saved from the scavenging Crows and Gulls. The other source of interest is the gunner wandering along the beach or ensconced in a hole in the sand. Him we hail as friend and fellow, inquire the luck, lament that so few birds are flying, learn perhaps some bit of gunner's bird-lore, and finally examine his bag possibly to find a rare specimen. Shooting of all shore birds is allowed in Massachusetts after July 15th, and the birds great and small are incessantly persecuted during their migration south. In the spring migration, however, the shore birds are protected as the close season begins on March 1st. On the beach, the birds are usually shot from "blinds," or "booths" as they are sometimes called. These are screens made of driftwood and seaweed, and a hole is generally dug in the sand in which the gunner ensconces himself. At times screens of cloth supported on stakes driven in the sand are used. To bring the birds within range as they fly by, or to induce them to alight, decoys of tin or of wood are used, generally arranged like a flock of birds, with their heads pointing to the wind. Occasionally large clam shells are stuck in the sand and at a distance simulate very well a flock of Peep. Much depends on the skill of the gunner in calling down the birds by cunningly imitating their notes, and by his care in keeping concealed and absolutely motionless until the moment that he delivers his fire. It is very difficult for a bird or a man to distinguish a gunner clad in old shooting clothes, which match in color the sand and sea wrack, provided the gunner keeps motionless. The least movement on his part at once attracts the eye, and the wary birds sheer off. As illustrating this principle, gunners sometimes lie quietly on the sand without any cover, jumping up and shooting at the last moment. Few old birds, comparatively, are shot by stalking on the large beaches, as, owing to the absence of cover, they are apt to keep out of gunshot, while young birds sometimes allow of close approach. Distances on broad beaches are very difficult to judge, and many birds are fired at out of range. The birds themselves are generally good judges of distance.

Twenty-five years ago I found the shore birds as wild and difficult to approach at Coffin's Beach as they are now, while on smaller beaches where they were less molested, as at Magnolia, they were comparatively tame, and this is the case at the present time at the protected Lynn Beach. It is to be hoped that the season for shore bird shooting may be deferred till August 15th or, better still, to September 1st. This would save many birds, especially the adults, which are most needed to continue the race. This seems to me more practicable than to try to put the smaller birds on the protected list. Many a Peep appears to the excited gunner as large as a Turnstone, and if shooting is allowed at all, small birds will be shot in the absence of large ones. The methods detailed above can be used by the field-glass hunter as well as by the gunner, and even to an old sportsman the field-glass method once tried has attractions which in many respects outweigh those of the gun. The birds appear to recognize the friendliness of the bird-lover, and often display at close range many interesting traits that are lost to the man who shoots on sight.

In easterly storms during the autumn flight, the gunner conceals himself in blinds on projecting sand bars, or lies quietly, clad in oilskins that match the sand, and shoots at the Scoters, Shelldrakes, and Black Ducks that at these times often fly low over the beach. Birds that are merely winged drop on the sand and are easily caught, while on the water the chances for their escape are always good. Wounded Ducks and also Gulls on the beach strive to reach the water, while wounded shore birds in the water swim for land. In winter the ice piled up by the waves on the beaches is used as a blind.

Both in midwinter and in midsummer the beach is a constant source of interest to the ornithologist. On January 4th, 1904, I was on Ipswich Beach at daybreak while it was still too dark to distinguish colors. The cold which was severe, 7° below zero, was much intensified by a strong northwest wind. The mouth of the Ipswich River inside the bar was filled with broken and crushing ice blocks. This pack ice extended along the beach for over a mile and the upper edge of the beach itself was piled with ice blocks smoothed over with frozen spray. Outside the ice the sea was boisterous and appeared to be boiling. The steam from the water, which was warm in comparison with the air, rising in great clouds and driven by the wind, formed almost a fog bank. On the landward side the peaks of the sand dunes, harried by the northwest wind, streamed mingled snow and sand. From the hills and fields inland the gale blew a continuous cloud of fine snow, stripping the ground bare in places and piling up huge drifts in the lee of trees and walls. Farther inland the marshes were beautiful with great blocks of ice thrown about in wild confusion, and threaded by numerous creeks all filled with ice, crushed and rumped by the

great pressure of wind and tide. Such a scene and such a season would not at first thought appear to promise much of ornithological interest. The very contrary was indeed the fact. While it was still quite dark the birds of the short Arctic days, the Snow Buntings and the Horned Larks, could be heard flying over to feed on the upper beach or in the fields or dunes on such grass-stalks as projected above the snow. On this winter's day the sun rose at 7.20 and these birds were stirring at 6.30 A. M. The Horned Lark and the Snow Bunting are easily distinguished in the daytime by their plumage, but the light was so poor at this hour that the birds could be told apart only by their call notes.

Over the rough ice and water gaps which lead up the Ipswich River, Ducks soon began to fly, heading straight into the wind. Bunches of a dozen to a hundred passed in rapid succession. With the dawn it was possible to see that Red-breasted Mergansers formed the larger part of these, hundreds of them going to feed in open places in Plum Island River and tributary creeks. Flocks of Whistlers were also common, and Surf Scoters; White-winged and a few American Scoters were also distinguished, although these for the most part flew back and forth outside. Herring Gulls in countless numbers flew about this icy waterway, occasionally alighting in a pool of open water or sitting quietly on the ice. Most of them followed the procession of Ducks to the inner waterways. On the wing in the fierce wind these Gulls, so sluggish on a calm summer's day, were flying about as swiftly and gracefully as Terns. Every now and then Kittiwakes could be seen, to be distinguished from the Herring Gulls by their still greater agility, and when actually side by side, by their smaller size. Great Black-backed Gulls, birds of exceeding grace in a strong wind, delighted the eye. At five minutes of seven, a group of low-flying black forms could be seen, coming swiftly from the region of the pines among the sand dunes. They were the forerunners of the army of Crows that had been spending the night there. Silently they came, singly and in groups of ten or twenty forming two distinct streams: one towards the marshes, the other along the beach and the waters of the Ipswich River, to feed on the way and some of them to reach the great Plum Island and Rowley Marshes above. A third stream, few in numbers, quartered the sand dunes and sought the thickets on the side of Castle Hill. All flew close to the ground to avoid the wind, and also to search for food. On this account their course was not so direct, not "as the Crow flies," as is the case on their return to roost after the day's hunting. One of them pounced at a Herring Gull that was devouring a fish on the ice, but the Gull turned on him fiercely and the Crow beat a hasty retreat. From 6.55 to 7.30 there was an almost constant stream of Crows,—perhaps five or six hundred of them,—coming from the sand dunes. As many more may have gone in the other direction.

Descending to the beach from my elevated station on a dune at sunrise, I counted six Ipswich Sparrows within a distance of a hundred yards, and the Horned Larks and Snow Buntings could now be seen to better advantage, although with the temperature below zero and a strong wind, field-glass studies were not of the easiest. On returning along Castle Hill, Chickadees, Goldfinches, and Tree Sparrows greeted me from the thickets, and a flock of fifty or more Horned Larks were comfortably feeding on the sidehill, and with them about a dozen Lapland Longspurs. As I was surmounting a drift on snowshoes a beautiful cock Ring Pheasant flew out from some sheltering larches like a meteor. His blue metallic head, snow-white ring around the neck, and beautiful golden-brown back and tail were brilliantly lit up by the rising sun. A Flicker called from some willow trees, and a poor little frozen Myrtle Warbler, with wings and tail partly spread, was found in the path under a buttonwood tree. This was certainly not a bad record for an hour and a half before breakfast on the fourth of January in such weather,—some nineteen species and several thousand individuals.

On the night of July 27th, 1904, the moon was full. The sun set at 7.10 P. M. red and fiery. Herring Gulls, urged by the rising tide, left the bar at the mouth of the Ipswich River and flew to the southern end of Ipswich Beach where they settled in a great multitude, perhaps 2000 in all. On my walking in that direction at 7.20 P. M. they rose and flew over to Coffin's Beach, where they apparently settled for the night. From 7.45 P. M. the Night Herons began to arrive, singly and in small groups, squawking as they flew, and spread themselves over the beaches and sandflats. Ring-neck and Piping Plover were heard calling but could not be seen in the dim light, and a Turnstone struck up its loud, sharp, rapidly repeated call, while from the grass back of the beach the song of the Savanna Sparrow could still be heard, and once or twice the song of the Northern Yellowthroat. Between 8 and 9 o'clock, the light of the moon being still obscured by the summer haze, the Plover and Turnstone were frequently calling and apparently flying about, while some Sanderlings and Semipalmated Sandpipers were uttering their notes in a very conversational tone. At 8.30 P. M. I heard the sad and melodious call of the Black-bellied Plover, and at this time also I first noticed the calls of small birds that were passing overhead, the forerunners of the great autumn migrations. These were heard at intervals throughout the night until half past three in the morning. At 9.45 P. M. in the obscure light of the moon I could see a large bird running nimbly along the beach, occasionally raising its wings. As it took to the water and swam away I concluded it was a wounded Gull, and the next morning I found Gull's tracks with a groove along the right side as if a broken wing had trailed. Later I saw the bird itself, a Herring Gull, and my inferences were

proved correct. At 11.15 P. M. some Spotted Sandpipers were calling in their anxious way, while the other shore birds were frequently heard. The Night Herons were constantly flying about and squawking, and walking along the edge of the waves. At 3 A. M. a Song Sparrow sang, and there was a slight suspicion of dawn; and again he sang at 3.20 when a faint glow was visible in the east, the moon being still bright. Robins began to sing at 3.50 A. M. and at this time six Night Herons could be seen flying north up the beach. Between 3.55 and 4 o'clock, 170 Night Herons passed in the same direction, flying along the edge of the water, a few going over my head as I lay on the upper edge of the beach. They were on their way to their day's rest in the trees on the north side of Castle Hill. Their dark forms and flickering flight in the uncertain light made a weird effect which their hoarse squawking served to heighten. Immediately after they had passed, came the forerunners of a great army of Herring Gulls, appearing as dark as the Herons, but their pointed wings emphasized the differences between them. Before 4.15 I had counted 448 flying by me from Coffin's Beach and three or four hundred more before 4.30 A. M., while a flock of over a thousand could be seen circling about and alighting on the sands exposed by the low tide off Coffin's Beach. At 4.05 a flock of thirty Sanderlings flew by me going south and at 4.15 an Eagle, — an immature Bald Eagle no doubt, — flew close over my head searching for dead fish on the beach. At the same time a large flock of Barn Swallows came from their night roost, and a little later all four species, Tree, Barn, Cliff, and Bank Swallows, were winnowing the air in hundreds, the numbers being in the order named. The first Crow, not an early riser, called at 4.30 A. M., and a minute later the sun rose as red as it had gone down.

CHAPTER IV.

THE SAND DUNES AND THEIR BIRDS.

"Till the sand was blown and sifted
Like great snowdrifts o'er the landscape,
Heaping all the shore with sand dunes."

LONGFELLOW, "*Hiawatha*."

PLUM Island, Ipswich and Coffin's Beaches are backed by areas of sand dunes varying from a quarter to three quarters of a mile in breadth. These dunes have the same general characteristics, but the sand at Plum Island is coarse and yellowish, while at Ipswich and Coffin's Beaches it is fine and white. As the Ipswich dunes are historic from the discovery there of the Ipswich Sparrow, a somewhat detailed description may not be out of place. The dunes here as well as at Coffin's Beach have advanced within recent years, owing to the cutting down of protecting tree growths, covering fertile fields and burying orchards. One of these orchards at Ipswich, buried nearly to the tops of the branches, still keeps alive and blossoms amid the waste of sand. A large drumlin with a northwest and southeast axis, on the side of which the orchard grows, is so covered with sand that it is often mistaken for a huge dune. The appearance of projecting boulders, and lately, with the shifting sand, the reappearance of an ancient fence in a gravel foundation shows its true character.

Sand dunes are often compared to waves of the sea in their appearance and motion. They do indeed resemble them with their steep and even overhanging crests, as if about to break, and their long sweeping slopes behind. This resemblance is made still more striking by the succession in parallel lines of these waves. There is one vital difference, however, between the water and the sand waves. Although they both advance, the advance of the sand waves is directly opposite to that of the water waves. The sharp, steep side of the dune is worn away by the wind, and streams out on the sweeping slope to leeward while the wave of the sea, driven by the same wind, pushes its steep crest in front. These waves of sand reach their fullest development at the southern end of the Ipswich dunes. Here they form a series of parallel waves, with their steep sides facing the north, that is, the direction from which come the fiercest winds. These waves have advanced southward in the middle more than at

either end, so that they describe the arcs of circles, and resemble a series of gigantic amphitheatres. One of these waves can easily be traced for some 1350 yards, or three quarters of a mile, stretching from the salt creek on the inside to the sea on the outside. The breadth of the waves varies from 40 to 200 yards, and the height from 20 to 50 feet. The highest points or peaks generally have long ridges of sand to leeward of them towards the south, exactly the same formation as seen in snowdrifts. Every now and then there is a cross-valley, sloping gently upwards with wind-swept perpendicular sidewalls. Everywhere in cuttings on the sharp faces, the wind stratifications are visible, and are interesting for study. The strata generally dip slightly towards the south as the sand is left by the wind on the southern or leeward slope of the dunes, but they vary greatly and are irregularly superimposed. Their characteristics are brought out more strikingly by the wind cutting deeply into the loose strata leaving the compact ones in bold relief. The ripple marks made by the wind and at right angles to it on the surface of the dunes constitute another interesting feature.

The dunes are restrained in their career by the binding power of the beach-grass (*Ammophila arundinacea*), whose roots extend in a network through the sand. These roots are exposed on the windward or retreating side of the dune and hang in festoons. On the leeward side, the grass struggles hard to keep above the accumulating sand. As a rule, owing to the binding grass, the changes in the dunes are slow. When the sand succeeds in breaking away from the grass, or in covering it up faster than it can push its way through, the dune sometimes advances with great rapidity, and a steep slope of soft sand is formed to leeward, where it is suddenly dropped by the wind. Occasionally a desert of several acres in extent of wind-swept sand, unhampered by grass, is formed among the dunes.

As illustrating the effect of the wind over a region devoid of binding grass, there occurred during the severe winter of 1903-4 an immense drift of snow and sand, separate and mingled, encroaching on the north side of a growth of pitch pines in the Ipswich dunes. The snow was so protected by a layer of sand, from one to two feet in thickness, which reflected but did not so easily conduct the sun's rays, that the snow became compact and crystalline, in fact a miniature glacier. On May 15th, 1904, this crystalline snow had a thickness of 38 inches at its exposed face, under which, extending back to a distance of three feet, was a true glacial cavern. The sand on top was cracked or crevassed, and this, together with the bending of the trees, suggested a slight motion down the slope. On May 30th, the face of ice was covered by sand, but marks made on a white birch showed that the drift had sunk 42 inches since April 24th and 22 inches since May 8th. A tree released entirely from the snow and sand had

branches broken $8\frac{1}{2}$ feet from the ground. A week later the ice had wholly disappeared.

The level ground between the sand waves or amphitheaters varies in breadth from two or three hundred yards to half a mile. Here are the bogs, the clumps of bushes, and groups of trees and, except in midsummer, the pools of water. At the northern end of the Ipswich dunes near the lighthouse, and partly sheltered by Castle Hill, the regular wave-like formation of sand is largely lost and great confusion, like a choppy cross-sea, is to be found in the wind-tossed dunes. Here also small circular depressions are common, with steep sides of sand all around, where the wind has evidently played in a circle. One of the best places to study embryo sand dunes is on the elevated parts of the beach, where clumps of beach-grass are beginning to appear. Around these the blowing sand collects. The deeper becomes the sand, tailing out to leeward, the more the grass struggles above it, and the dune has its origin.

The flora of the dunes is interesting. The most important plant is the beach-grass (*Ammophila arundinacea*), already mentioned. This, besides binding the sand, and offering a hiding and nesting place for the Savanna Sparrow in summer, feeds with its generous seed-stalks many birds throughout the winter, notably the Ipswich Sparrow, Horned Lark, Snow Bunting, and Lapland Longspur. Another plant which binds the sand is the poverty grass, (*Hudsonia tomentosa*), beautifully sage green and closely matted, in winter a sandy gray, but covered in June with a profusion of golden blossoms which give the lie to its common name. In the Ipswich dunes are two groves of pitch pines (*Pinus rigida*), each of several acres in extent. Under these pines grow a few lady's slippers (*Cypripedium acaule*). There are several thickets of white birches (*Betula populifolia*), and in the bogs, alders (*Alnus*), aspens (*Populus tremuloides*), and willows (*Salix*). The exceptional trees are a few red maples (*Acer rubrum*), two elms (*Ulmus americana*), dwarfed and stunted, that look large only at a distance, a few white pines (*Pinus strobus*), red cedars (*Juniperus virginiana*), a hemlock (*Tsuga canadensis*), and a clump of red birches (*Betula nigra*).¹ Beach plums (*Prunus maritima*), from which Plum Island is named, are not common at Ipswich. Sumachs, the staghorn (*Rhus typhina*) and poison (*R. venenata*), are to be found, and poison ivy (*R. toxicodendron*) abounds. Wild roses (*Rosa*), bayberry or myrtle (*Myrica carolinensis*), sweet gale (*M. gale*), shad-bushes (*Amelanchier*), and meadow-sweet (*Spiraea salicifolia*, var. *latifolia*) are all abundant. There are also a few small clumps of rhodora (*Rhododendron rhodora*), and may they long escape the ruthless flower-hunter.

¹The only other place in the County where red birches are found is along the Merrimac River and its branches.

The bogs are carpeted with cranberry vines (*Vaccinium macrocarpon*) which grow and bear luxuriantly without any care. Many berries escape the pickers and can be found on the plants throughout the winter. I have gathered them as late as the first of June, and very good "sauce" they make even at that unusual season. Blue irises (*Iris versicolor*) and the orchids, *Calopogon pulchellus* and *Pogonia ophioglossoides*, bloom abundantly in the early summer among the bogs, where also the sundew (*Drosera*) flourishes, and the burnet (*Poterium canadense*) is not uncommon.

In the dry sand are to be found the beautiful seaside golden-rod (*Solidago sempervirens*), the purple gerardia (*Gerardia purpurea*), the joint-weed (*Polygonella articulata*), and the curious euphorbia (*Euphorbia polygonifolia*). Here also, especially on the edges near the beach, the American sea-rocket (*Cakile americana*), saltwort (*Salsola kali*), cocklebur (*Xanthium*), and the halberd-leaved orache (*Atriplex patulum*, var. *hastatum*) are common and characteristic. The star-shaped puff-ball (*Geaster*) is also common among the dunes.

Although most of the pools of water are stained brown with vegetation, one may occasionally be found in the early spring which is as clear and green as an alpine lake, and the snow-white peaks of sand in the vicinity serve to increase the illusion. Early in May, the bayberry bushes are still gray and wintry, the sweet gale is a rich chestnut brown, and the *Hudsonia* begins to emerge from its sandy state and show a slight tinge of sage green. The cranberry plant is always beautiful with its varied tones of red, chestnut, and green, and its beautiful berries which, at first green and white, become brilliant red, with deep purple bloom. In June whole acres are golden with the *Hudsonia* blossoms, and the bogs are dotted with the blue iris and the pink and magenta *Pogonia* and *Calopogon*.

The tracks of animals in the sand are always interesting, from the extraordinary ones of the grasshopper and the toad, the universal Crow's tracks, and those of many smaller birds, to those of the mice, hares, skunks, foxes, and muskrats, the last-named proclaiming his identity by the groove made by his heavy tail. There are two aliens whose tracks abound in the dunes, the one from the eastern continent, the Ring Pheasant, the other from the western part of our continent, the jack rabbit. The latter animal, when disturbed, bounds off through the dunes, looking almost as large as a calf to the astonished intruder.

At all seasons the dunes are beautiful, even though in summer they be hot and weary tramping and cold and wind-swept in winter. The sand blows and cuts so fiercely that glass has been ground opaque by the blast in a single storm, and one has to look after his bird-glasses as well as his eyes. The true dune-lover, however, enjoys as deeply the beauty of their winter desolation as he does the glories of their spring loveliness.

Such favored regions among the dunes as well as on the islands and hillsides near the sea were favorite resorts of the American aborigines before the arrival of the whites, as is attested not only by scattered stone arrowheads and hatchets which have been found there, but also by the presence of shellheaps composed largely of the clam, and, in some places, of the oyster. In these shellheaps, bones of birds, among them those of the Great Auk, of fish, and of mammals may be found, as well as bits of pottery, stone and bone implements.

Of the birds of the dunes, one must name the Ipswich Sparrow first, for here it was, in 1868, that Mr. C. J. Maynard discovered it. The other winter birds characteristic of the dunes are the Horned Lark, Snow Bunting, and Lapland Longspur, although the Longspur generally disappears after the middle of January. All feed on the seeds of the beach-grass, and literally cover the sand with their tracks. Another bird common at all seasons in the dunes, but especially abundant in winter, roosting there in considerable numbers, is the American Crow. Here is the best place to find his food records, namely, his ejected pellets, in which cranberries and bayberries, so common in the dunes, are prominent. Another bird that may always be found among the dunes in winter sheltered by the pines and feeding on bayberries is the Yellow-rumped Warbler. Flickers and Chickadees frequent these same pines in winter and enjoy the same nourishing berries, and one or two Red-breasted Nuthatches may sometimes be found there. Crossbills and Pine Grosbeaks, in the winters of their plenty, also feed there.

Savanna Sparrows nest in numbers at the foot of the clumps of tall beach-grass throughout the dunes, and on the edges of the tidal inlets from the marsh. The nests of Red-winged Blackbirds and Bronzed Grackles are abundant in the bogs and groves of birches. The Crow, in the absence of tall trees, builds perforce in the stunted pines and birches, at times only ten or twelve feet from the ground. Black-billed Cuckoos, Kingbirds, Song Sparrows, Northern Yellowthroats, and Robins, are all common summer residents. Tree Swallows nest there occasionally in hollow trees and Bank Swallows in the wind-cuttings of the dunes. All the Swallows collect in great numbers in the dunes during the fall migrations, particularly the Tree Swallow which feeds on the bayberries. A few Piping Plover still lay their eggs in shallow depressions of the sand, but the Common, Arctic, and Least Terns, found breeding among the dunes in the late sixties by Maynard, have long since ceased to nest there.

During the spring and autumn, the dunes with their sheltering bogs and groves at times swarm with migrants resting along this great highway by the sea, on their way to and from their nesting places in the North. The American Pipit abounds in the autumn, but generally eludes us in the spring. Migrant Warblers are easily found and studied there, as the islands of trees are so few

and small, and at the same time the trees themselves are so short, that the concentration is sometimes extreme. Mr. Ralph Hoffmann, on May 22d, 1904, saw within the space of three minutes eleven different species of Warblers passing through one apple tree in the dunes. These were as follows : Black and White, Nashville, Parula, Yellow, Black-throated Blue, Magnolia, Bay-breasted, Black-poll, Blackburnian, and Black-throated Green Warblers, and Redstart. In addition to this bewildering array of Warblers, I have also seen among the dunes the Yellow-rumped, Chestnut-sided, Pine, Yellow Palm, Prairie, and Canadian Warblers, the Oven-bird, Water-Thrush, and Northern Yellowthroat, a grand total of twenty different members of the Warbler family. Other migrants and residents are of course to be found in the dunes but it is hardly necessary to speak of these here.

CHAPTER V.

THE SALT MARSHES AND THEIR BIRDS.

"Agowamme [Ipswich] is nine miles to the North from Salem, which is one of the most spacious places for a plantation, being neare the sea, it aboundeth with fish, and flesh of fowles and beasts, great Meads and Marshes and plaine plowing grounds, many good rivers and harbours and no rattle snakes."—WOOD, *New Englands Prospect*, 1634.

THE extensive areas of salt marshes to be found around the Squam, the Essex, Castle Neck, Ipswich, Parker, Plum Island, and Merrimac Rivers are regions of great interest to the ornithologist as well as to the sportsman. Extending from the rocky, pine-clad hills of the back of Cape Ann on the south, to the Merrimac and the limits of the County on the north, and from the sea on the east back for a varying distance up to five miles, the marshes are intersected by numerous rivers, large and small, and dotted by islands of greater or lesser size. The larger streams, coming from the higher country to the westward, fresh in character before they meet the tidal current, are rightly called rivers, while the numerous smaller streams that wander through the marshes and are nearly dry at low tide, are known as creeks. These salt marshes were evidently great basins or bays extending in from the sea after the glacial period. Bars, beaches, and sand dunes were piled up later, vegetation gradually encroached upon the lessened tidal currents, and there are now great areas of marsh threaded by meandering creeks. Most of the islands are typical glacial drumlins, whose lower outlines are obliterated by the encircling marsh, some showing their tops only above the grass. In some places there are evidences of recent changes in level. The great marshes back of Plum Island River are called the "Hundreds."

From a botanical point of view the salt marshes can be divided into three distinct regions. First, the region of the coarse salt-grass (*Spartina stricta*) everywhere in Essex County called "thatch," which flourishes on the edges of creeks only, washed by every tide. It grows to a height of four or five feet and retains the fine *detritus* at its base, so that one always sinks into soft mud when struggling through it. The thatch is prized for bedding and for mulch, being free from weed seeds, but although it is generally cut, much is carried off by the tides before it is harvested; or it is broken off in winter, and lines the

edges of the marsh. The second region is that of the salt-grass or marsh hay (*Puccinellia maritima* and *Spartina patens*), a region reached by the tides once or twice a month at full and new moon. This grass rarely grows more than ten or twelve inches in height. It is regularly cut and harvested, and brought off on poles carried by men, or in hay-boats along the creeks, or left in huge cocks, elevated on small piles,—“staddles” as they are called,—to be taken off on sledges when the marsh is frozen. In cutting the grass, mowing-machines are used except in the soft places, and the horses wear broad, wooden marsh-shoes. Among the salt-grass grow patches of samphire (*Salicornia herbacea*). The marsh rosemary (*Statice limonium*, var. *caroliniana*) is common, and the grass-like, seaside plantain (*Plantago decipiens*). The third region is the upper edge of the marsh where it joins the uplands, a region visited only by the unusual spring and autumn tides. Here grows the “black-grass,” in reality a rush (*Juncus gerardi*), which gives the edges a distinctly dark color, almost black when the rush is in fruit. In this region also, or just above it, one may find patches of the delicious sweet-grass (*Hierochloë borealis*), while the silver-weed (*Potentilla anserina*), seaside gerardia (*Gerardia maritima*), and seaside golden-rod (*Solidago sempervirens*) also flourish. In the channels of the creeks grows the eel-grass (*Zostera marina*) commonly mistaken for a seaweed but in reality a flowering plant. This is cast up by the tides with the thatch and is used by a number of birds in nest-building.

One of the picturesque features of these marshes in the autumn months is the herring fishery. This is carried on in the creeks and waterways by night. A flaming torch in the bow of the boat attracts the herring, which are then dipped up with a hand-net, and many barrels full are taken in a single night. A fisherman related to me an unpleasant experience he once had from a Duck flying towards the dazzling torch, and striking him full in the face. Two blackened eyes resulted from this chance acquaintance.

In various places in the marsh, where the drainage is poor, the water and dead thatch collect and kill the grass, forming mudflats and pools, or “sloughs” as they are generally called in the good old English of Bunyan. These are the favorite resorts for the shore birds and the gunners.

The delicate greens of the marsh in early spring, with the ribbons and basins of blue water, constantly swelling and dwindling with the changing tides, the deeper greens and brilliant yellows and browns of midsummer, the rich chestnuts of autumn with the scarlet patches of samphire, the faded browns and arctic ice formation of winter,—all give an indescribable charm to the salt marshes.

In the salt creeks and at the mouths of the rivers, nearly all of the sea birds are at times to be found, and it is not necessary to repeat here the list already given. While the Gulls and Terns, during the summer, prefer the

beach and sea, they are often to be found feeding in the waterways and on the marsh itself, especially during stormy weather. In the large basin at the mouth of the Essex River and in Plum Island River, Common Terns find favorite feeding places, and are frequently to be seen flying about and resting on the numerous buoys. They also spread over the marshes, especially at the high, autumn tides. Herring Gulls at times collect in great numbers on the sandflats of the creeks and on the marsh itself. The Great Black-backed Gull also is often to be found there, and, in the migrations, the Bonaparte's Gull, although the latter seems to prefer the beach.

The three characteristic Ducks of the marshes during the migrations and in winter, are the Black Duck (both the Common and the Red-legged), the American Golden-eye or Whistler, and the Red-breasted Merganser. The loud *quack* of the Black Ducks is often to be heard as they are feeding in the marshes at night, and their swift-flying forms and breezy wing-strokes are to be seen and heard in the early morning as they repair to the sea for their day's rest. The Golden-eye, on loudly whistling wings, hastens in at sunrise from his night's rest on the ocean to take the place of the Black Duck in the marsh. These two are the Box and Cox of the marshes. On stormy days, however, the Black Ducks prefer the marshes to the sea, and even in pleasant weather there are always a few of these birds to be found in the marshes, generally feeding concealed in the small, winding creeks. The Red-breasted Merganser, like the Golden-eye, is a frequenter of the creeks by day, but the majority remain outside on the ocean. Its cousin, the Goosander, being a fresh-water bird, only rarely is found in the salt creeks and the same is true of the Hooded Merganser.

Of the Rails, the Sora or Carolina Rail is the only one that can be depended upon as a regular visitant to the salt marshes, and then only during the migrations. The Yellow and Virginia Rails, as well as the American Coot, prefer, in Essex County at least, to wet their feet in fresh water, although the two last are occasionally found in the salt marshes.

The Herons are well and conspicuously represented in this region and one of the great pleasures of exploring the winding creeks in sailboat or canoe, is the frequent glimpses of one of these birds. The Great Blue Heron shows to best advantage here, where sense of proportion is lacking in the broad expanse of the marsh. In the spring, and after the first of August, these are common birds in this region, and there is no doubt but that their numbers would increase if the gunner could be purged of the instinct to kill them on sight, either because they are so large, or possibly because of a prejudice inherited from the game-owners and game-keepers of the Old World. The Green and the Night Herons and the Bittern are also to be found in the marshes, the Green Heron being the least common. The Night Heron is seen to best advantage

during June, when the demands of the young are so great that the parents are obliged to fish by day as well as by night. These handsome birds with their long plumes, which are worn by adults of both sexes, can then be seen in broad daylight, often in considerable numbers, on the sand- and mudflats and bars of the numerous creeks. Later in the season, the young and old flock to the marshes by night, and their *squawk* becomes a familiar sound to the dwellers in these regions.

Of the shore birds there are some whose occurrence in the salt marsh is accidental. Thus the Wilson's Snipe delights in fresh-water marshes, but may very rarely be found on the salt marsh. The Sanderling and the Knot are typical beach birds, but on occasions they stray into the marsh, and even the Purple Sandpiper, a bird of rocky islands, has been found on the marshes of Cape Cod, although this must have been purely accidental. The Phalaropes, in the same way, have also been found in marshes. Sandflats and sloughs in marshes near the sea sometimes attract such beach birds as Black-bellied Plover, Turnstones, Piping and Semipalmated Plover. The Golden Plover, which prefers the upper beach and the fields, may also wander into the marshes. The Semipalmated Sandpiper is not infrequently seen here with his marsh-loving friend, the Least Sandpiper, and on those occasions he looks very sandy and out of place. The Upland Plover, although typically a bird of the fields and hills, will not infrequently drop into the upper parts of the salt marshes, as there are many grasshoppers in this region, and his uplifted wings, as he alights, are very conspicuous in the black-grass. The characteristic shore birds of the salt marsh are, however, the Least Sandpiper or "Mud-peep," to be found on nearly every mudflat during the migrations, the Spotted Sandpiper that flies before the intruder in half circles along the banks of the muddy creeks uttering his familiar cry, the Yellow-legs, Greater and Lesser, whose alarm notes ring out over the marsh, startling each dreaming bird and gunner to attention, the Grass-bird or Pectoral Sandpiper, and the Dowitcher. The Red-backed and Bonaparte's Sandpipers and the Stilt Sandpiper, the Hudsonian Godwit, Hudsonian Curlew, and Willet, although all frequenters of the beach, appear to be equally at home in the mud-sloughs of the marsh. The Solitary Sandpiper, however, much prefers fresh-water mudholes, or those that are nearly fresh, to the true salt marsh.

The number of land birds that frequent the salt marsh is comparatively limited. Of the birds of prey, the Marsh Hawk is most often seen there, although it prefers fresh-water marshes and uplands, and the Short-eared Owl sometimes strays from the sand dunes to the marsh. The American Crow may perhaps be put at the head of the list of marsh-frequenting land birds, as it finds much food in the marshes, and large numbers of these interesting birds are attracted from the inland country, particularly in the winter season, when frost

and snow lock fast the uplands. At this time flocks of fifty or a hundred or more Crows may be seen walking sedately in the short grass or searching the eel-grass and sandflats at low tide. All is game that comes to their net : fish, dead or alive, various species of molluscs, crustaceans, and any carrion that may be washed up on the marsh. When severe winter weather has frozen the creeks and covered the marshes with ice, Crows may frequently be seen searching in the cracks between the ice cakes or on the edges of the scattered pools made by the force of the tides. They even fish off the edge of ice cakes.

The Meadowlark also enjoys the marsh, but although a few may linger in cold weather, they are rarely to be seen when extensive ice formation occurs. The Bobolink, Red-winged Blackbird, and Bronzed Grackle in summer, and the Rusty Grackle during the migrations, find good feeding in the salt marshes. Barn, Cliff, Bank, and Tree Swallows skim the marshes as they do the surface of a pond for the insects to be found there, and gather in large flocks in middle and late summer from all the surrounding country, preparatory to their southward migration. Posts, stumps, "staddles," gunners' blinds, in fact, every available prominence is covered at times so as to appear black with the crowding birds, among which the Tree Swallow takes first rank in point of numbers. At a signal they all rise, showing alternately their white breasts and dark backs. Around every available resting-place the ground is white with the Swallows' droppings, in which numerous bayberries appear prominently.

The Kingbird makes its erratic flight over the marsh after insects and alights, screaming, on post or "staddle." The enterprising Robin, as he visits the beach, visits also the marshes, and the Song Sparrow occasionally strays there from the neighboring fields. On rare occasions the Ipswich Sparrow leaves the dunes for the marsh. The Savanna Sparrow and the Sharp-tailed Sparrow are, however, the most characteristic summer Passerine birds of the salt marshes, and they both make their nests there, or rather on the borders of the marsh and on islands wherever the ground is elevated enough to escape the high tide of the full moon. Here, cleverly concealed in the dried thatch and eel-grass thrown up by the early spring and autumn tides, their nests are to be looked for, and, it may be added, less often found. The Nelson Sharp-tailed Sparrow is to be found as an autumn migrant on the same marshes, while its subspecies the Acadian Sharp-tail is a very common spring and autumn migrant. In the salt marshes the Sharp-tailed Sparrow takes the place of the Marsh Wrens in the fresh-water marshes. Both groups of birds are most interesting, and are seldom seen except by one who looks for them. They are an unknown quantity to the casual observer. Both are very deft in concealing themselves, and in moving about through the grass and reeds. Both have curious songs, although that of the Sharp-tails is much more suggestive of the hissing of hot iron in water

than of a song. Another frequenter of the marshes, common enough in the autumn, but rare in the spring, is the American Pipit or Titlark. Coming in flocks and perfectly at home in the marshes, this bird prefers, however, the cultivated fields, the sand dunes, or the beaches. During the colder months of the year the Horned Lark is to be found in flocks throughout this region. Less commonly the Snow Bunting feeds there, and rarest of all, during its shorter stay, the Lapland Longspur, borne along by the flock of Larks or Buntings, may descend with them to the marsh. During the very high tides, especially in the spring and autumn, the marshes are converted into inland seas, and the birds that harbor there are driven to the more elevated regions. By skirting the edges of the marshes at these times one may often find such birds as Bitterns, Herons, Rails, shore birds, and Sharp-tailed Sparrows.

In the marshes the shooting of shore birds is done almost entirely from permanent blinds, which are owned or leased by gunners. The blinds are made of bushes or stakes driven into the mud with branches, eel-grass, or thatch so disposed as to conceal the gunner within. Sometimes to keep out the tide a water-tight box is used, the outer sides of which are covered with mud and salt-grass sods. The blinds are placed near mudholes and small pools, and a convenient alighting-place is often made extending out as a miniature sand bar directly away from the blind, so that the gunner may rake with more deadly effect the hapless birds. Decoys are used as on the beaches, sometimes in large numbers, and their reflections in the waters of the pools appear very life-like. Much skill is at times displayed in clever imitation of the different bird-notes in order to call the birds within gunshot, sometimes from distant parts of the marsh. In former years shore birds doubtless flocked to every suitable feeding-ground in the marshes, but now with diminishing numbers they are found year after year at a limited number of favored spots, notwithstanding the use of the gun there, while they neglect others apparently just as suitable.

Duck-shooting in the creeks and marshes of Essex County is practiced in several ways. The float, as it is called, is commonly used—a light, flat-bottomed, narrow skiff with sides rounding over to conceal the gunner, who lies flat, and, by an oar extending through a hole in the stern, skillfully sculls onto the game. Small bushes or thatch in the bow and on the sides increase the protection. By getting to windward of the birds he is enabled to drift or “float” down towards them, and as they rise against the wind he sits up for a shot. Scoters, Buffleheads, and even Black Ducks may be obtained in this manner if care be used, but Whistlers and Shelldrakes are generally too wary unless they be approached under cover of the bank of the creek. Blinds of bushes or thatch, or cakes of ice along the creeks, and wooden decoys are used for Whistlers and Shelldrakes, while Black Ducks pay but scant attention to any but live

decoys which are used to attract them. In windy weather, however, when the well-painted Black Duck decoys are bobbing about actively on the water, the birds are occasionally deceived. Black Ducks are sometimes shot, especially in stormy weather, as they spring from pools in the marsh or from small creeks under whose banks at low tide they have been feeding concealed, or as they fly low to and from their feeding-places at sunset and sunrise. In calm weather they are apt to fly high.

When the creeks are locked by ice, the gunner, clad in white, takes his station behind blocks of ice near a small opening and shoots the birds as they fly to and fro. At these times, owing to scanty feeding, even the wary Black Duck becomes desperate and loses some of its shyness. This aberration of mind on the part of the Black Duck is always hoped for but rarely found, and when it does occur the gunner is apt to be rewarded by only skin and bones.

On moonlight nights the gunner ensconces himself in a blind by a creek or mudflat and uses bunches of seaweed, blocks of mud, or junks of ice covered with dark cloth for decoys. The Black Ducks readily come in to these rude decoys in the uncertain light of the moon. The gunner may hear the whistle of wings all around him, often apparently close at hand, but is rarely able to see the birds except momentarily as they fly across the path of the moon. When the moon is overcast, however, the light is more diffuse and the birds may be more readily seen. Occasionally the Ducks swim up the creeks to the decoys, and are shot on the water. It is cold and uncertain, but often exciting sport.

CHAPTER VI.

THE FRESH MARSHES AND THEIR BIRDS.

"This Towne [Ipswich] is scituated on a faire and delightfull River, whose first rise or spring begins about five and twenty Miles farther up in the Countrey, issuing forth a very pleasant pond. But soone after it betakes its course through a most hideous swamp of large extent, even for many Miles, being a great Harbour for Beares."—JOHNSON, "*Wonder-working Providence*," 1654.

THE fresh marshes are the various regions about the rivers and ponds, formerly large basins after the glacial period, but now choked with vegetation, yet still flooded in winter and early spring. One of these, probably the same that is alluded to in the "*Wonder-working Providence*," but no longer a "Harbour for Beares," may be taken as a typical example. This is of large extent, situated within the boundaries of Wenham, Hamilton, and Topsfield, and is threaded by the Ipswich River. In this marsh the growth of rushes and grasses is rank and tall, and among these a multitude of Long-billed Marsh Wrens live and build their nests. The rush-like plants in which they breed are chiefly as follows, belonging to several widely separated families: great bulrush (*Scirpus lacustris*), horse-tail (*Equisetum limosum*), sweet flag (*Acorus calamus*), blue joint-grass (*Calamagrostis canadensis*), reed canary-grass (*Phalaris arundinacea*).

There are several islands in this marsh, one of which, near the middle, is the site of a friend's camp to which I have made occasional visits. This island is of irregular shape and of most interesting glacial formation, extending in narrow curving ridges through the marsh. It is covered with a tall growth of red and white oaks, beeches, canoe birches, white pines, hemlocks, and several other trees. Early in May the marsh is generally flooded, and the new grass and reeds begin to push up in green islands. The surrounding woods show the prevalence of the red maple in the ruddy tint of the tree tops. The oaks are still bare and wintry on the islands, but the ground below is yellow with the dog-tooth violet (*Erythronium americanum*), whose mottled leaves are not its least charm. Later in May the regions of grass increase and the water dwindles. The islands are fringed with the delicate green of willow and birch, the line broken here and there by the snowy shad-bushes. Above these rise the white oaks, just putting forth their silvery young leaves, and higher still looms the dark background of white pines, with here and there the candelabra tips of the red pines.

Early in May is the time to explore the fastnesses of the marsh, for at this season one can often push a canoe through the length and breadth of this interesting region. The piping of hylas is almost deafening, and not a one to be seen. Red-winged Blackbirds are the most common birds and are to be seen on every hand, the males, after a month of waiting, nearly bursting with their efforts to display their gorgeous epaulettes to the newly arrived ladies. They are in the air, on the partly submerged bushes, and especially on such tufts of grass as emerge above the flood. The greatest numbers are to be found in the late afternoon, as during the day they are foraging in the upland fields. The varied songs and call notes of the Red-wing would fill a book, and are ever ringing in the ears.

The next most characteristic sound of the fresh-water marshes in the spring is the pumping of the Bitterns. It is to be heard from several quarters of the marsh, sometimes from three or four different birds in quick succession and one almost expects to hear the water gush out as the pumping progresses, so perfect is the imitation. With the canoe skillfully and silently directed towards the sound, paddling only during the pumping, one may sometimes hear the preliminary gulps and catch sight of the performer with bill pointed up and breast inflated, making huge efforts at this, his curious love song. Every now and then we start a pair, sometimes two or three pairs, of Black Ducks, that mount straight up on noisy wings and then circle about over the woods, perhaps to return after our departure. They have nests doubtless not far off. Occasionally we put up a pair of the much smaller Wood Ducks.

From all the wooded islands and small clumps of bushes come the varied songs of the Swamp Sparrow, and the birds are frequently seen chasing each other in sport. This is an abundant and most interesting bird of this region. On the islands during the migrations, the birds of a much larger area are frequently concentrated, and along the edges one may see many different kinds of Warblers, as well as other land birds. Overhead and skimming the grass and the water, the different Swallows are common, except the Purple Martin, which, however, appears in diminishing ranks.

Swifts and Nighthawks, the latter often in large numbers during the migrations are to be seen, and throughout the darker hours, the call of the Whip-poor-will comes everywhere from the woods. The scream of the Red-shouldered Hawk during the day and the hoot of the Great Horned Owl at night may also be heard.

I have omitted till the end my especial favorites of these marshes, the Long-billed Marsh Wrens with their bubbling songs and delightful ways, and the two common species of Rails, the Carolina or Sora, and the Virginia Rails. These last, unlike good children, are much more often heard than seen, the *ker-wee* of the former and the telegraphic *cut-cutta-cut* of the latter coming mysteri-

ously from nowhere. The Short-billed Marsh Wrens are to be found in less reedy places where the grass is short and tufted, or even in English-grass meadows.

The Yellow Rail rarely, the American Coot, the Dabchick, and various species of Ducks, especially the Black Duck, Wood Duck, and both species of Teal, frequent the marshes during the migrations, the Ducks dropping down into the pools and river. So common are they at times that one portion of this marsh is locally known as the "Feather-bed," another, as "Wood Duck Bushes." Wild Geese frequently alight in these secluded regions during the spring migrations, sometimes spending several days there before continuing their northward flight. Often they leave behind so many tokens of their moulting that the meadow looks like a poultry-yard. Green and Night Herons are common summer birds, as is also the Great Blue Heron during the spring and late summer months.

Some actual records of the various bird-voices of this marsh during the darker hours may be of interest, and show best the character of the fresh marsh.

May 22d, 1904; 7 to 7.15 P. M. The evening chorus of birds is still strong, the Red-winged Blackbirds, Rose-breasted Grosbeaks, Swamp Sparrows, Northern Yellowthroats and other Warblers, Catbirds, Long-billed Marsh Wrens, Wood Thrushes, Veeries, and Robins being especially prominent. The sun sets at 7.09 P. M.

7.15 to 7.30 P. M. The Swamp Sparrows, Northern Yellowthroats, Catbirds, Wrens, Thrushes, Robins are still active, Red-wings sing only occasionally while the other birds become silent at the end of this period.

7.30 to 7.45 P. M. The first Whip-poor-will is heard at 7.30 P. M., calling 20 times,—138 times,—104 times,—5 times. Swamp Sparrows, Northern Yellowthroats, Catbirds, Wrens, Thrushes still sing at intervals; Night Herons *quawk*. It is otherwise silent except for the frogs, whose full chorus has begun. It is now so dark that a Whip-poor-will that has alit near me on a log cannot be distinguished.

May 21st, 1904; 7.45 to 10 P. M. A clear night, no moon. Whip-poor-wills are singing nearly all the time; my largest count of repeated songs is 296. Long-billed Marsh Wrens frequently, Swamp Sparrows, Oven-birds, and Northern Yellowthroats occasionally heard.

May 22d, 1904; 12 to 12.30 A. M. Whip-poor-wills singing often.

1.30 to 1.45 A. M. A Long-billed Marsh Wren sings three times, a Swamp Sparrow twice, a Northern Yellowthroat gives its flight song once, and a Whip-poor-will repeats its refrain many times.

1.45 to 2 A. M. Songs of the Marsh Wren bubble up from several places,

six times, the Swamp Sparrow trills twice, and once an Oven-bird performs his crazy flight song. Carolina Rails call twice, a Red-shouldered Hawk screams and the Whip-poor-wills are heard.

2 to 2.15 A. M. There is a constant undertone of distant Whip-poor-wills and a few hylas, while leopard frogs "snore" close at hand. The Long-billed Marsh Wrens sing twice, a Least Flycatcher once, a Swamp Sparrow once, and the Oven-bird gives his flight song again. A belated Bobolink chirps as he flies north, and a few Warblers' calls are heard overhead. How comparatively silent are the nocturnal migrations in the spring! The young and inexperienced of the autumn have fallen by the way, or have learned wisdom.

2.15 to 2.30 A. M. The Marsh Wren sings three times, the Swamp Sparrow sings twice, the Oven-bird indulges in three flight songs, and one incomplete, ordinary "*teacher*" song. The Red-shouldered Hawk screams again, and a Spotted Sandpiper whistles in his alarmist manner. Had I been in the salt marshes I should doubtless have heard not infrequently the long call of the Greater Yellow-legs. A Black-billed Cuckoo sang, but whether in flight, as described by Gerald H. Thayer,¹ or from some high tree I could not determine.

2.30 to 2.45 A. M. At 2.35 A. M. there appears in the east the slightest trace of gray dawn. Oven-birds sing their common song twice, Swamp Sparrows three times, and the Long-billed Marsh Wrens bubble forth six times. The Whip-poor-wills continue, one calling 130 times in succession. A Catbird sings for the first time at 2.40 A. M. An Owl—possibly a Barred Owl—flies by.

2.45 to 3 A. M. The first Song Sparrow and immediately afterwards the first Robin pour forth their songs at 2.45 A. M. My friends the Wrens perform nearly to bursting eight times, and the Swamp Sparrows, with their very varied tones, fourteen times. The Oven-bird explodes like a rocket in the air twice, a Flicker calls at 2.50, and a Northern Yellowthroat mounts into the air in song. A few Black Ducks fly by, and at 2.58 begins a characteristic note of the early morning. It is the chirping song of the Tree Swallow which appears to be all about me and especially overhead. There is now a constant undertone of Robins singing their morning hymn.

3 to 3.15 A. M. At 3 A. M. the rosy hue of dawn appears in the east. Cocks crow at a distant farm-house, a Red-winged Blackbird sings his *quank-er-rec*, and a Chewink calls from the woods near at hand, but best of all, the divine song of the Wood Thrush is heard. Wrens and Swamp Sparrows sing so frequently that all count is lost. The Oven-bird, Least Flycatcher, and Northern Yellowthroat sing at frequent intervals; a Wilson's Thrush calls.

¹ G. H. Thayer: Bird-Lore, vol. 5, p. 143, 1903.

With it all is a constant undertone of Whip-poor-wills, Robins, and Tree Swallows. It is still too dark to distinguish writing clearly and the stars are still shining.

3.15 to 3.30 A. M. A Whip-poor-will starts this period by calling 81 times, but I am too busy to count him again. A Tree Swallow occupies the whole fifteen minutes in singing lustily from his perch on a bush; most of the Swallow notes come from overhead, but the birds cannot yet be seen in the air. A Nighthawk *speaks* overhead and a Phoebe calls for the first time at 3.18. At 3.25, while a few stars are still visible, a Yellow Warbler, a Redstart, and a Wilson's Thrush sing. A Bittern pumps and continues the operation at frequent intervals. The Pheasants begin to crow, some 20 minutes after the Domestic Cocks.

3.30 to 3.45 A. M. The full morning chorus is now on. Bitterns, Black-billed Cuckoos, Wood Pewees, Least Flycatchers, Red-winged Blackbirds, Swamp Sparrows, Chewinks, Warblers, Wrens, Wood Thrushes, Robins — all are heard together, and the Whip-poor-wills keep it up till 3.45. A few stars are still shining.

3.45 to 4 A. M. Tree Swallows can now be seen flying in irregular circles and "singing." Their songs have nearly stopped now. Crows begin to call at 3.45. Kingbirds, Rose-breasted Grosbeaks, and Red-eyed Vireos, not before heard, begin at 4 A. M., at which time the last star disappears and the sun rises gloriously at 4.16 A. M.

Later in the season when the birds are burdened with family cares, and their spirits are subdued, they do not so much indulge in revelry by night, with the exception of the Long-billed Marsh Wren which is certainly nocturnal in its habits, being more melodious by night than by day. Thus a record for the night of June 24th and 25th, 1904, made in a canoe by the light of a full moon among the Topsfield marshes, is briefly as follows:

7.30 to 7.45 P. M. The sun has set at 7.24. Least Flycatchers, Red-winged Blackbirds, Swamp Sparrows, Catbirds, Long-billed Marsh Wrens, Wood Thrushes, Veeries, and Robins, are all singing vigorously, while the bull-frogs and mosquitoes do their best to drown the bird-music.

7.45 to 8 P. M. All of the above are heard, with the exception of the Least Flycatcher, but the songs are growing fainter. A Northern Yellowthroat and a Chewink are also heard. The Whip-poor-wills begin at 7.55 P. M., but are much less energetic than a month ago. Of several counts, 12 to 16 repetitions are common, the intervals are longer, and 93 was the longest song heard.

8.30 to 10 P. M. With the exception of a few Marsh Wrens, the Whip-poor-wills are the only birds heard, and there are long intervals when all bird-voices are hushed.

11.45 P. M. to 12.15 A. M. The Whip-poor-will calls 15 times in succession and is then silent. Wrens sing 42 times.

12.15 to 1.15 A. M. Nothing but Wrens everywhere, with a constant undertone of bull-frogs, a trilling of tree-toads, and the occasional splash of a pickerel.

1.15 to 2.00 A. M. Having paddled to the center of Wren-ville in the marsh, I count 187 distinct songs of this bird, with a distant and constant undertone of them; one bird sang near me eight times in a minute.

2 to 2.30 A. M. The first Swamp Sparrow's song rings out at 2.10 A. M., and six are heard in this half hour. At 2.27 A. M. a Northern Yellowthroat gives its flight song, and at 2.30 a Domestic Cock lifts his voice. Sunrise at 4.11 A. M.

Very different are the nights in late September on the fresh marshes. The tints of autumn are beginning to appear in the brilliant reds of the maples and the yellows of the hickories. The oaks and the alders are still as green as in midsummer, but the marshes themselves look worn and brown, dotted here and there with the brilliant yellow of the bur-marigold (*Bidens chrysanthemoides*).

The sharp scream of the Blue Jay resounds from the woods and the Bluebird's mournful note is heard as he flies over. Save for these all is quiet on September 20th, at sunset, except for the quacking of the decoy Black Ducks and their joyful splashings as they wash themselves, glad to escape from their coops. At 5.30 P. M. a Catbird mews and a Goldfinch and some Black-poll Warblers call as they fly over. Just before six, my old friends the energetic Long-billed Marsh Wrens sing three times and Swamp Sparrows sing twice, although their chirpings are heard frequently and one alights close to my head on the bower of oak branches. A Bittern flies by and sails silently into a reedy thicket. The sun has set behind a bank of clouds at 5.46 P. M. Between 6 and 6.15, Marsh Wrens sing four times, but after that all is silent except for the twitterings of passing migrants in the air. From time to time and sometimes from several places, the short clucks and whistles of the Carolina Rail are heard. Not a Duck is to be seen although often Wood Ducks, Teal, and Black Ducks drop into the pools at sunset.

Paddling back to the island at 7.30 P. M. by moonlight, with the constant chirpings of the passing migrants in my ears, I hear the saw-filing notes of the little Saw-whet Owl coming from a tall tree, and later from some bushes in the marsh.

CHAPTER VII.

THE PONDS AND THEIR BIRDS.

"Seekest thou the plashy brink
Of weedy lake?"

BRYANT, "*To a Waterfowl.*"

IN the early days, the waterfowl that flew in countless multitudes along the coast line, tarried to rest and feed in the numerous ponds that dot the surface of the County. Incessant persecution has sadly thinned their ranks, and the survivors are very loath to trust themselves to these inviting havens, having learned wisdom from bitter experience. When, however, they see flocks of their companions feeding unharmed, as is the case on such ponds as those in the grand reservation of the Lynn Woods, where no guns intrude, they soon learn to tarry there, and reproduce in a small, but let us hope an increasing way, the scenes enacted in the early days. Would that more of these safety spots could be created, for there is nothing more interesting and beautiful than waterfowl disporting themselves in safety. The owners of land bordering ponds could, by posting signs, exclude gunners from the waters. Waterfowl would soon learn to congregate there during the migrations, and add greatly to the attractiveness of the ponds. Such safety spots scattered all along our coast, or indeed throughout the country, would be of inestimable value to bird-lovers and would help greatly in preserving an interesting and diminishing class of birds.

As an example of the way in which the waterfowl make use of these havens may be recorded the fact that on November 1st, 1904, on Spot Pond, in the Middlesex Fells close to Essex County, I found 230 Black Ducks, 5 Mallards, 10 Scaup, both Greater and Lesser, 1 Bufflehead, 1 American Widgeon, 2 Ruddy Ducks, 6 American Coot, and 8 Herring Gulls. A few weeks later, on November 27th, I estimated the wildfowl inhabitants of this pond as follows: 400 Herring Gulls, 500 Black Ducks, both the Red-legged and the Common subspecies, 15 Mallards, 5 American Widgeons, 2 Ruddy Ducks, 1 Lesser Scaup, 6 American Mergansers, and 6 American Coot—a most interesting assemblage.

There are other ponds where the migrating Ducks and Geese see their fellows, sometimes in large numbers, feeding in apparent security and enticingly

calling them to their company. Unsuspectingly they hasten to join them, but learn too late that these birds are not friends but treacherous dupes, trained, unwittingly no doubt, to decoy them to their ruin.

There are a number of shooting stands at various ponds in the County where live Black Duck, Mallard, and Canada Goose decoys are kept for the purpose of tolling down their passing fellows. These stands vary in complexity from the temporary ambush of reeds and branches with a few wooden decoys and perhaps a couple of live ones, to the more elaborate permanent stands, controlled by individuals or clubs. These latter are generally built on wooded points, within the shelter of which the camp with bunks for sleeping is hidden. Close-fitting shutters prevent the lights streaming from the windows at night and alarming any wandering birds. From this camp a path, carefully screened by brush, leads to the blind on the shore of the pond. This is a fenced-in structure, the boards being thoroughly covered with brush of all sorts, skillfully arranged to conceal it, while a canopy of branches overhead helps to hide the gunners from any passing birds. In front of the blind is a gently sloping sand or gravel beach, leading straight out to an acute angle or sand bar. If the spot chosen for the blind is boggy, the beach, which is very desirable, is made by placing sand on a foundation of logs and planks.

The wooden decoys, or "blocks," as they are called, are often skillfully carved and painted to represent Black Ducks, Scaups, Whistlers, Widgeons, and Canada Geese. The more perfect the copy of the living bird, the more successful are they in tolling them in. The blocks are either anchored off the shore, or attached to "runners" in groups of fifteen or twenty. These "runners" are small ropes or lines arranged like endless chains, extending from the blind to pulleys in buoys sunk a few inches below the surface of the water, at a distance of a hundred and fifty yards or so off in the pond. The live decoys are tethered near the shore or on the beach itself by straps or "boots" attached to their legs, while a snap and swivel fastens them to stakes or to leaden weights. Some live decoys may be attached to a runner, while others are allowed to wander about at will. In the blind are kept pens of "flyers" or "scalers," as they are called, generally young birds. These birds are thrown up into the air when Ducks are seen flying about, or swimming on the water at a distance. They fly or "scale" off for a varying distance, and, alighting on the water, begin to swim towards their home, where they are sure of companionship and food. At times the flyers are automatically released from pens at a distance. The sight of these birds flying freely about, quacking and swimming to an attractive beach naturally entices their wild relatives; for a beach on which they may rest and preen their feathers always has its charms. The fascinations of the beach are increased by the sight of the decoy birds eagerly feeding on corn which has

been thrown out to them. The best decoys are those that quack vigorously to each other, and especially to the wandering wildfowl.

Another manœuvre which helps greatly to bring in the cautious wild Ducks is the working of the runners, especially if the Ducks have alighted among or near them. The lines inside the blind are quietly and steadily pulled, so that the blocks or live decoys move in a very natural way towards the danger line, or the blocks are pulled back and forth for short distances as if the birds were feeding. At a signal all the gunners in the blind fire at once upon the unsuspecting birds, and the execution, often at close range, is very great. The survivors, if any there be, receive the contents of second barrels and of other guns at hand as they spring into the air or make off.

A professional gunner is kept on watch at many of the large camps during the season, and, if any of the proprietors are in the camp, he signals by bells the appearance of wild Ducks. If he is alone he shoots the birds himself if he can, and in this way there are very few flocks that leave the pond without paying toll in greater or lesser amount to the treacherous blind.

An accurate list of the different species of waterfowl killed at the various blinds in Essex County would add greatly to our knowledge of the movements and distribution of this interesting class of birds, but it is unfortunately the case that few gunners know or care about the exact naming of their feathered game. Their records must therefore be examined with caution. Many birds are called by the wrong names, and such is the confusion of names among the waterfowl that most records are valueless.

I am therefore fortunate in being able to present the records kept for the last five years, from 1900 to 1904, inclusive, by Dr. John C. Phillips, at his shooting stand at Wenham Lake. The records have been made with great care, and the identifications can be depended upon. I am greatly indebted to Dr. Phillips for his kindness in placing them at my disposal. Many interesting notes from this stand will be found in the Annotated List. Wenham Lake lies two thirds in Wenham and the remaining third in Beverly. It contains about three hundred and twenty acres, and is famous for the crystal clearness of its ice. It supplies both Beverly and Salem with water. The following is a summary of the waterfowl shot at this stand on Wenham Lake for the five years from 1900 to 1904, inclusive.

	1900	1901	1902	1903	1904
Holbøll's Grebe	0	} 3	1	1	1
Horned Grebe	0		4	} 12	15
Pied-billed Grebe	0		2		4
Loon	2	1	1	0	0
American Merganser	} 6	} 13	6	5	12
Red-breasted Merganser			2	1	0
Hooded Merganser	13	9	1	7	2
Mallard	0	15	3	1	10
Black Duck	64	85	50	105	132
Gadwall	0	0	0	0	1
American Widgeon	0	1	0	11	19
Green-winged Teal	0	0	0	1	0
Blue-winged Teal	0	0	1	1	0
Shoveler	0	1	0	1	0
Pintail	1	9	6	3	1
Wood Duck	0	0	0	8	4
Redhead	0	29	1	22	4
Canvasback	0	0	1	0	0
Greater Scaup	} 22	} 18	} 49	} 39	3
Lesser Scaup					45
Whistler	19	17	9	9	19
Bufflehead	6	2	5	13	2
Old Squaw	0	0	2	2	0
American Scoter	} 12	0	} 12	} 18	} 15
White-winged Scoter		7			
Surf Scoter		1			
Ruddy Duck	15	59	23	38	9
Canada Goose	0	47	0	4	22
Total	160	317	179	302	320

A record has also been kept at this shooting stand of the number of birds that alighted in Wenham Lake or were seen flying over it.

	1898	1899	1900	1901	1902	1903
Alighted,	450	640	403	520	300	514
Seen flying,	—	—	581	629	291	370
Total			984	1149	591	884

CHAPTER VIII.

LIGHTHOUSE RECORDS.

"The sea-bird wheeling round it, with the din
Of wings and winds and solitary cries,
Blinded and maddened by the light within,
Dashes himself against the glare, and dies."
LONGFELLOW, "*The Lighthouse*."

IF a complete and accurate record could be kept at the lighthouses of the birds that are killed by dashing against the lanterns, we should be possessed of very valuable data on the subject of migration. I have corresponded with the keepers of all the lighthouses on the Essex County coast and have visited several of the light-stations. I have also received for identification some of the birds that have been killed by striking the lights.

In 1880, an account was published by Dr. J. A. Allen¹ of the Destruction of Birds by Light-Houses, made up of letters received by Mr. Ruthven Deane. In this account reference is made to two Essex County lights. Of Cape Ann Lights on Thatcher's Island, the report, under date of March 6th, 1877, is: "Very few birds are killed by flying against the light except in May and June, when a 'Swamp Sparrow' comes about the light, and is sometimes killed. 'Have known six to be killed in one night.' Occasionally a sea bird is killed, — not more than three or four in a year." Of Marblehead Light, April 1st, 1877, the following: "Very few birds strike the light. At one time 3 small ones were found dead outside the light. They are never around except in foggy nights. No damage has been done by birds striking for the last five years." In Dr. Allen's paper several lighthouse keepers state that the number of birds killed is much less than formerly. Thus of Wood Island Light, Saco Harbor, it is stated that "of late years very few birds have flown against the light." Of Highland Light, at North Truro, the following: "The large sea birds, as Ducks, Coots, etc., do not now come near the light, as they used to." At Cape May Light: "Sometimes the light is struck during heavy storms by Black Ducks and various kinds of sea-fowl, but not nearly so often as formerly." These observations, if accurate, — men are apt to magnify the happenings of former days,

¹ J. A. Allen: Bull. Nuttall Orn. Club, vol. 5, p. 131, 1880.

and general impressions in the absence of records are often unreliable, — would suggest one or more of three things: first, a diminution in the number of birds; second, a change in their course of flight; or, third, an acquired knowledge and avoidance of the dangerous lights. The last explanation may appear fanciful, but Dixon,¹ in speaking of the nets placed on the shores of the Wash to catch the autumn migrants, says that “the birds are learning, by many years’ experience, to avoid these snares, flying over instead of through them, and that nothing like the numbers are caught nowadays.”

Thinking to obtain some light on this question I wrote to the keepers at Point Lepreaux, New Brunswick, and at Fire Island. At the former station, in 1885, Mr. Brewster² made his classic observations on bird migration, finding numerous birds attracted to their destruction by this light, while Mr. Dutcher³ studied the destruction of birds at Fire Island, in 1882 and 1883. The letter from Point Lepreaux, under date of February 25th, 1904, is as follows:

“About six years ago the old fixed light was burned down. A year later a revolving light was built and since then there have been but few birds killed, probably not more than fifty birds in the five years. . . . But few strike the glass, but they scale off without being injured. The lighthouse is now situated some fifty yards farther from the fog alarm than the old building. . . .”

(Signed) G. HERBERT THOMAS, *Light-keeper*.

Owing to these changes in the character and location of the light no arguments can be deduced from the reduction in the number of birds killed. The letter from the keeper at Fire Island, dated September 29th, 1904, is as follows:

“There are not as many birds killed by striking the lantern as in years gone by. . . . There were three Wild Geese killed one night last winter and about twenty song birds killed one night this fall, and about fifteen another night. There seem to be a great many congregate here for the fall migration.”

(Signed) E. S. MOTT, *Keeper, Fire Island L. H.*

In 1882, Mr. Dutcher reports that 256 birds were killed at this light, and in 1883, 562 birds. The falling off in numbers of late years is certainly remarkable.

The following are the results of my inquiries on the Essex County coast.

(1) NEWBURYPORT LIGHT: a fixed light of the fourth order, 50 feet above sea level on a tower 35 feet high. Under date of April 8th, 1903, the following letter was written to me by the keeper:

¹ Charles Dixon: *British Sea Birds*, p. 294, 1896.

² Wm. Brewster: *Bird Migration*, Mem. Nuttall Orn. Club, no. 1, 1886.

³ Wm. Dutcher: *Auk*, vol. 1, p. 174, 1884.

"In regard to birds that strike the tower and kill themselves, as soon as they are on the ground they are captured by cats. The birds that are most likely to strike the tower are what I call Spider-catchers. They are about here in the spring and fall and strike mostly in foggy nights...."

(Signed) E. C. HADLEY.

Mr. Hadley's remarks about cats are probably very true, and account for the small number of birds found at many lights.

(2) IPSWICH LIGHT: a fixed and flash light of the fifth order, 50 feet above sea level on a tower of 30 feet. It is nearly concealed by the sea of dunes in which it stands some 350 yards from high-water mark. Although the former keeper, the late Capt. Ellsworth, and the present one, Mr. Mills Gunderson, have kept watch for birds for me, none have struck the light for many years, with the exception of a Short-eared Owl, in 1894.

September 14th, 1904, was a muggy, rainy, and foggy day, but the fog cleared in the evening, and birds were evidently encouraged to migrate, for from my station outside the lantern at the top of the tower, they could be heard calling to each other at frequent intervals. They continued to fly by during the gentle southwest rain, but none of them came near enough to the lantern to be seen. During sudden, hard downpours, the birds ceased passing, or at least none were heard. From ten o'clock that night till four the next morning no watch was kept. There were occasional hard downpours, but not a feather was found on the platform outside the lantern. Between four and half past, in the morning, birds were constantly flying by, but were not seen. Apparently they paid no attention to the light. During part of this time it rained hard. The notes of a Ring-neck Plover and of a Semipalmated Sandpiper were recognized. This certainly seemed an ideal night for migrants to become confused and strike the lantern, and there was no lack of passing birds, but they avoided the snares of Ipswich Light.

(3) ANNISQUAM LIGHT: a fixed light of the fifth order, 50 feet above sea level, on a tower 34 feet high. The following was written to me on May 30th, 1903:

"It is very seldom that birds hit my light, but if they do I will send them to you."

(Signed) JOHN W. DAVIS, *Keeper*.

I have received none from this station as yet.

(4) CAPE ANN LIGHTS: these are twin lights on Thatcher's Island, off the end of Cape Ann. They are fixed lights of the first order, on towers 165 feet above sea level, and 112 feet above the rocks.

Mr. A. F. Tarr, the head keeper, has kept a record since 1884, not only of the birds killed by striking the lights, but also of the arrival of birds about the

island. His record of many of the larger sea birds is an accurate one, as he is perfectly familiar with such birds as Loons, Shags, and Gannets, but most of the land birds are classed together as small land birds, although some have been accurately identified. I am much indebted to him for his kindness in allowing me to examine this record, and for much interesting information, as well as for sending me some of the birds killed against the lights. Mr. Tarr has been a keeper at Thatcher's Island since 1876, and he thinks that the number of birds striking the lights has diminished, but his records for the last twenty years do not show this to be the case.

The number killed annually varies greatly, averaging about 15 or 20, but amounting to many more in some years, or even in a single night. The earliest and latest dates at which birds are recorded as being killed are, April 6th to June 18th in the spring flight, and July 20th to December 18th in the fall flight, showing fairly well the migratory periods. To many, July 20th may seem too early for the autumn migration, not realizing that the beginning of this movement occurs so early in the summer. I myself have heard small land birds passing over in large numbers during the night as early as July 27th, and the arrival in the first part of July of many shore and sea birds is well known. As early as August 8th, fifteen small land birds are recorded as having been killed in one night at Thatcher's Island. Hawks, Flickers, Crows, Blackbirds, Swallows, Robins, and Bluebirds, all easily identified birds, have never struck the lights. These are all known to be day-migrating birds. On the other hand, a Ruby-throated Hummingbird, included among the diurnal migrants,¹ struck on May 13th, 1886. Mr. F. J. Cook, one of the under keepers, told me that he saw another Hummingbird flying about the lantern one dark night, but it escaped unharmed. Ducks, Brant, Petrels, Phalaropes, Curlew, Sandpipers, Plover, Bittern, Rail, Brown Thrasher, Titmouse, and Woodcock are among the victims recorded by Mr. Tarr. I have myself identified a Black-billed Cuckoo killed on June 10th, 1903, at 11 P. M.; a Yellow-bellied Sapsucker on September 28th, 1903; Yellow Redpoll Warbler, April 19th, 1904; 8 Northern Phalaropes, September 9th, 1904; Magnolia Warbler, October 8th, 1904; Swamp Sparrow, Savanna Sparrow, White-throated Sparrow, Solitary Vireo, and Parula Warbler on October 9th and 10th, 1904.

In some cases the velocity of the bird, when it strikes, is so great that the glass outside the lantern is broken. This glass is one quarter inch French plate. One Brant and five Ducks, two of them Blue-winged Teals, are recorded by Mr. Tarr as having gone through this glass. In one case the Duck was picked up intact with the exception of the head, which was missing. Another

¹ Wm. Brewster: Bird Migration, Mem. Nuttall Orn. Club, no. 1, p. 19, 1886.

Duck shot through the glass, and was taken alive and unharmed inside; and a Blue-winged Teal was living some hours after going through the glass. The fact that the bird is sometimes unharmed can be explained by the great velocity at the instant of the impact, just as the candle, in the old experiment, is shot from a gun through an inch board. The Brant is recorded as having made a hole 19 by 20 inches in size. This was on April 11th, 1901. The Blue-winged Teals went through on October 26th, 1890, and October 15th, 1903, while the three other Ducks performed the feat on December 18th, 1884, December 5th, 1885, and October 14th, 1888, respectively.

On the same night that the Brant made the large hole in the glass, three others struck and were killed. In the autumn flight of the same year, namely, November 26th, 1901, thirteen Brant met their doom in the night by dashing against the light. An Eider Duck struck one of the lights on April 10th, 1901, and a Petrel, on June 8th, 1891. On August 2d, 1903, between 30 and 40 Plover or Sandpipers were seen hovering about the south towers between 1.30 and 3 A. M., but none were killed. On August 18th, 1901, a Rail and 13 Plover were killed, and on June 13th, a Brown Thrasher flew to its death. There are two records of Woodcock killing themselves against the lanterns, one on April 14th, 1893, and the other on March 25th, 1901.

The most remarkable record, however, is that of September 2d, 1899. On this night an immense flock of "Sea Geese" or Phalaropes, probably the Northern Phalarope, dashed against the lights, so that the dead and dying covered the balconies and the ground around the towers. One man picked up 800 of these birds and Mr. Tarr estimated that 1000 were destroyed. Again, on September 9th, 1904, eight out of a large flock of Northern Phalaropes seen about the lights, killed themselves. This was between 12.30 and 4 A. M. I identified the remains of one of these.

Canada Geese are said to fly about the lights on foggy nights, and loudly honk, but they have not been known to strike. Mr. Tarr and other keepers report that on foggy nights, during the migrations, many birds are to be seen about the lights, repeatedly fluttering against the glass, or simply flying about outside in a confused manner, but only a very small proportion do themselves a fatal injury. Sometimes they flutter down onto the platform, but disappear with the first rays of the morning.

On September 23d, 1904, I spent the night at Thatcher's Island. It was a clear moonlight night with a strong northwester blowing—a very poor night for bird observation at a lighthouse. An hour spent on the platform outside the lantern of the south tower was fruitless. Not a bird was to be seen, while the roar of the surf and the howling of the wind made it impossible to hear any bird-notes. The next morning I found a Brown Creeper creeping about on the inhospitable rocks where it had paused to rest on this great highway by the sea.

(5) EASTERN POINT LIGHT, Gloucester: a fixed and flash red light of the fourth order, 60 feet above sea level on a tower 33 feet high.

April 2d, 1903.

"I never find any birds around this lighthouse, as this is a red light and the birds never follow that ray."

(Signed) GEORGE E. BAILEY.

The red light is apparently not the cause of the absence of bird destruction, for birds are killed by striking other red lights, as at Wood Island, Maine.

(6) BAKER'S ISLAND LIGHTS: two fixed lights of the fourth order, 87 and 64 feet, respectively, above sea level, on towers 52 and 29 feet high. Under date of February 3d, 1904, the keeper writes:

"I have never known any large birds such as Ducks, etc., to strike against the glass of the tower at this station. But frequently in foggy weather during spring and summer months, I find small birds at the base of the towers, which have killed themselves during the night. On the morning of the dark or yellow day [September, 1881] I picked up nearly one hundred of small birds . . . Should I find any birds I will send them to you."

(Signed) WALTER T. ROGERS.

(7) HOSPITAL POINT LIGHT, Beverly: a fixed light of the third order, 63 feet above sea level, on a tower 39 feet high. The record from this light is as follows, the letter being written to me on November 7th, 1904:

"In answer to your request about the birds I would state that there has been but one killed by striking against this light since I have been at this station, which is thirty years. That was a Woodcock in the spring of 1888."

(Signed) JOSEPH H. HERRICK, *Keeper*.

(8) MARBLEHEAD LIGHT: a fixed light of the sixth order, 43 feet above sea level, on a tower 23 feet high. There is a small light on a mast 57 feet above the main lantern.

January 29th, 1904.

"I have not seen any birds kill themselves on my light since I have been here."

(Signed) H. T. DRAYTON.

(9) EGG ROCK LIGHT, off Nahant: a fixed red light of the fifth order, 87 feet above sea level and 25 feet above the rock.

January 28th, 1904.

"I have now been here nearly sixteen years, and to my knowledge there has not been one bird killed by striking the light tower in all this time. There are but few birds that stop upon the rock; I suppose it is because there are no trees for them

to alight upon. We have the little Sandpipers here in summer that breed their little ones upon the island, and they are the only ones that stop here. Along in April and May when the birds return from their southern home, sometimes in foggy weather and wind coming from the south, the island will be covered with all kinds of birds, but just as soon as the weather clears they will leave to go farther north from here. But for some reason they never seem to fly against the lighthouse lantern so as to get killed, as they do at some stations on the coast. Should there be anything I could do in any way to aid you, I should be pleased to do so freely."

(Signed) GEO. L. LYON.

This letter is interesting and shows that the birds that crowd the island during foggy weather in the migrations are for some reason able to avoid destruction by the light. It is, however, possible that some are killed, but being blown off, escape observation or are eaten by cats.

CHAPTER IX.

ORNITHOLOGICAL HISTORY OF ESSEX COUNTY.

1616-1904.

"Ayre darkening sholes of pigeons picke their berries sweet and good,
 The lovely cherries birds entice to feast themselves in woods.
 The Turkies, Partridge, Heath-hens and their young ones tracing passe,
 The woods and medowes, Achorns eat, and hoppers in the grasse."
 ANON., "*Good News from New England*," 1648.

AMONG the writings of the early travelers and explorers of this region, as well as in the histories written from time to time of the old towns of Essex County, occasional references are found to the birds, and some of these are of great interest to ornithologists. Several of these references are to birds that are now extirpated from this part of the country, while in two cases the species have become extinct. Many other birds, especially those used for food, are now rare or even only accidental in the County.

The immense numbers of waterfowl of all kinds in the early days of this part of the country are attested by all the older writers. The history of one of these waterfowl, now extinct, namely, the Great Auk (*Plautus impennis*) is so interesting that I have gone outside of the County in order to give it briefly in detail. The last specimen of this bird was killed by Eldey, off the southwest point of Iceland, in 1844, the last living bird was seen in 1852, and a dead specimen was picked up in Trinity Bay, Newfoundland, in 1853.¹ The Great Auk was not, as popularly supposed, a bird of the polar seas, but ranged from Iceland to the Bay of Biscay on the eastern, and from Greenland to Virginia on the western shores of the Atlantic Ocean. The most important breeding station on our shores was Funk Island, off Newfoundland, from which large stores of its bones and even mummified remains have been brought by Stewitz, in 1841, Milne, in 1874, and especially by Lucas, in 1887.² The extinction of this interesting bird was undoubtedly due to man. Its breeding stations were visited for

¹ John Macoun: Catalogue of Canadian Birds, part 1, p. 26, 1900.

² Alfred Newton: Dictionary of Birds, article "Gare Fowl," 1893-96; also Charles Dixon: Lost and Vanishing Birds, p. 87, 1893.

years, and the birds were ruthlessly slaughtered for food and fish-bait, while the latest survivors were killed by expeditions fitted out for the purpose of supplying the various museums and collectors. Great Auks were often called Penguins and an old gunner, residing at Chelsea Beach, assured Audubon that he "well remembered the time when the Penguins were plentiful about Nahant and some other islands in the bay."¹

Putnam² records the finding of a humerus of this bird at Ipswich by Baird, in August, 1866, and many bones of the Auk were found by Maynard³ in the shellheaps there, in 1867, and by Maynard and Allen, in 1868.

Richard Whitbourne in his *Voyage to Newfoundland*, in 1618, naïvely throws light on the extinction of this bird. He says: "These Penguins are as bigge as geese, and fly not, for they have but little short wings, and they multiply so infinitely, upon a certain flat Island that men drive them from thence upon a board into their Boats by hundreds at a time; as if God had made the innocencie of so poore a creature to become such an admirable instrument for the sustentation of man." Alas, poor "Penguin"! Would that you could have "multiplied infinitely" so that the present generation of bird-lovers might have enjoyed and fostered you!

Cormorants, the Double-crested (*Phalacrocorax dilophus*) and Common (*P. carbo*), although still common migrants were very abundant in the early days of the County, and the former and possibly the latter, bred here. Wood,⁴ writing in 1634, says: "Cormorants bee as common as other fowles, which destroy abundance of small fish . . . they use to roost upon the tops of trees, and rockes, being a very heavy, drowsie creature, so that the *Indians* will go in their Cannowes in the night, and take them from the Rockes, as easily as women take a Hen from roost." Josselyn,⁵ in 1675, gives a fuller account of this as follows: "We must not forget the *Cormorant*, *Shape* or *Sharke*; though I cannot commend them to our curious palats, the *Indians* will eat them when they are fley'd, they take them prettily, they roost in the night upon some Rock that lyes out in the Sea, thither the *Indian* goes in his *Birch-Canow* when the Moon shines clear, and when he is come almost to it, he lets his *Canow* drive on of it self, when he is come under the Rock he shoves his Boat along till he come just under the *Cormorants* watchman, the rest being asleep, and so soundly do sleep that they will snore like so many Piggs; the *Indian* thrusts up his hand of a sudden, grasping the watchman so hard round about his neck that he

¹ J. J. Audubon: *The Birds of America*, vol. 7, p. 245, 1844.

² F. W. Putnam: *Proc. Essex Inst.*, vol. 5, p. 310, 1868.

³ C. J. Maynard: *The Naturalist's Guide*, p. 159, 1870.

⁴ Wm. Wood: *New England's Prospect*, 1634; p. 33 of 1865 reprint.

⁵ John Josselyn: *An Account of two Voyages to New England*, 1675; p. 279 of 1833 reprint.

cannot cry out ; as soon as he hath him in his *Canow* he wrings off his head, and making his *Canow* fast, he clambreth to the top of the Rock, where walking softly he takes them up as he pleaseth, still wringing off their heads ; when he hath slain as many as his *Canow* can carry, he gives a shout which awakens the surviving *Cormorants*, who are gone in an instant." ¹

The Pied or Labrador Duck (*Camptolaimus labradorius*), which has been seen in the flesh by men now living, has, like the Great Auk, become extinct. Elliot,² who saw a considerable number of these birds at various times between 1860 and 1870 in the markets of New York, believes that all the alleged causes for the disappearance of this Duck are unsatisfactory, while Newton³ has no doubt that the shooting down of nesting birds witnessed by Audubon on the rocky islands off the Labrador coast, and carried on with increasing intensity year by year, could produce no other result. Two males were killed in November, 1844, by Nicholas Pike at the mouth of the Ipswich River. One of these birds is now in the collection of the Long Island Historical Society of Brooklyn, N. Y.⁴ A female was shot at Swampscott in September, 1862, by Mr. Arthur Thomas.⁵ C. J. Maynard⁶ says that he thinks he saw one of these birds in Plum Island River in the winter of about 1872. In the fall of 1874, J. Wallace killed a Labrador Duck at Long Island, and the latest record of its capture anywhere was by Gregg⁷ at Elmira, N. Y., on December 12th, 1878.

Snow Geese (*Chen hyperborca* and *C. h. nivalis*), accidental at the present day, were probably common in the early times. Thus Wood⁸ writes : " The second kind is a white Goose, almost as big as an *English* tame Goose, these come in great flockes about Michelmasse [September 29th], sometimes there will be two or three thousand in a flocke, these continue six weekes, and so flye to the southward, returning in March, and staying six weekes more, returning againe to the Northward ; the price of one of these is eight pence." Morton,⁹ in 1637, says : " There are Geese of three sorts, vize : brant Geese which are pide, and

¹ In this connection the following written over two hundred years later is of interest : " On dark nights, when the Cormorants are asleep, the Fuegian hunter, hanging by a thong of seal-skin, glides along the cliffs, holding on to jutting points of rock ; when near a bird he seizes it with both hands and crushes its head between his teeth, without giving it time to utter a cry or make a movement. He then passes on to another, and so continues until some noise puts the Cormorant to flight." J. Deniker : The Races of Man, 1901.

² D. G. Elliot : The Wild Fowl of the United States and British Possessions, p. 172, 1898.

³ Alfred Newton : Dictionary of Birds, article " Extermination," 1893-96.

⁴ Wm. Dutcher : Auk, vol. 8, p. 205, 1891.

⁵ Wm. Dutcher : Auk, vol. 11, p. 7, 1894.

⁶ C. J. Maynard : Birds of Eastern North America, p. 456, 1881.

⁷ W. H. Gregg : Amer. Nat., vol. 13, p. 128, 1879.

⁸ Wm. Wood : New England's Prospect, 1634 ; p. 34 of 1865 reprint.

⁹ Thomas Morton : New English Canaan, 1637 ; p. 189 of 1883 reprint.

white Geese which are bigger, and gray Geese which are as bigg and bigger then the tame Geese of England, with black legges, black bills, heads and necks black; . . . There is of them great abundance. I have had often 1000. before the mouth of my gunne."

The Whistling Swan (*Olor columbianus*), now of accidental occurrence, and probably the Trumpeter Swan (*Olor buccinator*), never seen now, are frequently referred to by the earlier writers. Wood¹ says: "There be likewise many Swannes which frequent the fresh ponds and rivers, seldome consorting themselves with Duckes and Geese; these bee very good meate, the price of one is six shillings."

Josselyn² says: "The water-fowl are these that follow, *Hookers* or wild *Swans*, *Cranes*, *Geese* of three sorts, grey, white, and the brant *Goose*, the first and last are best meat, the white are lean and tough and live a long time."

Higginson,³ writing from Salem in 1630, says: "In winter time this country doth abound with wild geese, wild ducks, and other sea fowle, that a great part of winter the planters have eaten nothing but roast-meate of divers fowles which they have killed."

Cranes, probably the Sandhill Crane (*Grus mexicana*), long since extirpated in Massachusetts, occurred in the early days of the colony. These birds are thus referred to by Thomas Morton: "Cranes there are greate store, that ever more came there at S. Davids day [March 1st], and not before: that day they never would misse."

These sometimes eate our corne, and doe pay for their presumption well enough; and serveth there in powther, with turnips, to supply the place of powthered beefe, and is a goodly bird in a dishe, and no discommodity." Capt. John Smith, in 1616, also speaks of Cranes.

This bird is to be distinguished from the Great Blue Heron, which is still a common bird of the County, and which is now sometimes erroneously called a Crane, but, unlike the true Crane, frequents the marshes and feeds on fish, while the Cranes, as Morton says in his account just quoted, "sometimes eate our corne."

The shore birds are spoken of by the early historians, although many of their descriptions leave us much in doubt as to the species. Thus Wood says, "The Humilities or Simplicities (as I may rather call them) bee of two sorts: the biggest being as big as a greene Plover, the other as big as birds we call knots in *England*. Such is the simplicity of the smaller sorts of these birds,

¹ Wm. Wood: *New England's Prospect*, 1634; p. 33 of 1865 reprint.

² John Josselyn: *An Account of two Voyages to New England*, 1675; p. 278 of 1833 reprint.

³ Francis Higginson: *New England's Plantation*, 1630; p. 121 of 1792 reprint.

that one may drive them on a heape like so many sheepe, and seeing a fit time shoot them; the living seeing the dead, settle themselves on the same place againe, amongst which the Fowler discharges againe. I my selfe have killed twelve score at two shootes: these bird are to be had upon sandy brakes at the latter end of Summer before the Geese come in."

Josselyn¹ gives this quaint account of these birds: "There are little Birds that frequent the Sea-shore in flocks called *Sanderlins*, they are about the bigness of a *Sparrow*, and in the fall of the leaf will be all fat; when I was first in the Countrie the *English* cut them into small pieces to put into their Puddings instead of suet, I have known twelve score and above kill'd at two shots." And Morton says: "Sanderlings are a dainty bird, more full boddied than a Snipe; and I was much delighted to feede on them because they were fatt and easie to come by, because I went but a stepp or to for them: and I have killed betweene foure and five dozen at a shoot, which would load me home.

Their foode is at ebbing water on the sands, of small seeds that grows on weeds there, and are very good pastime in August." The same kind of "pastime" and similar methods are used at the present time, but on the much diminished and more wary survivors of former days.

The Heath Hen (*Tympanuchus cupido*) was no doubt formerly common in the pastures and woods of Essex County. It was called the Pheasant in the early days. It was formerly "so common on the ancient bushy site of the city of Boston, that laboring people or servants stipulated with their employers not to have the *Heath-Hen* brought to table oftener than a few times in the week!"²

The Wild Turkey (*Meleagris gallopavo silvestris*) was formerly a ranger of Essex County. Capt. John Smith,³ that acute observer, in coasting Cape Ann in 1616, speaks of seeing "*Turkies*" among other birds. Morton says: "Turkies there are, which divers times in great flocks have sallied by our doores; and then a gunne, being commonly in a redinesse, salutes them with such a courtesie, as makes them take a turne in the Cooke roome. They daunce by the doore so well.

Of these there hath bin killed that have weighed forty eight pound a peece." Higginson says: "Here are likewise abundance of turkies often killed in the woods, farre greater then our English turkies, and exceeding fat, sweet, and fleshy, for here they have abundance of feeding all the yeere long, as strawber-

¹ John Josselyn: An Account of two Voyages to New England, 1675; p. 279 of 1833 reprint.

² Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 662, 1832.

³ Quoted by F. A. Ober: History of Essex County, by D. H. Hurd, vol. 1, p. 677, 1888.

ries, in summer all places are full of them, and all manner of berries and fruits." Although the Turkeys have long since departed, wild strawberries still abound.

The name "Turkey Shore" still borne by the right bank of Ipswich River, where it meets the waters of the sea within and below the town of Ipswich, was so named, in 1635, according to Felt.¹ A quotation from Wm. Wood's "New England's Prospect," first published in 1634, sheds interesting light on this name. He says, speaking of Turkeys: "In winter when the Snow covers the ground, they resort to the Sea shore to look for Shrimps, & such smal Fishes at low tides. Such as love Turkie hunting, must follow it in winter after a new falne Snow, when hee may follow them by their tracts: some have killed ten or a dozen in halfe a day; if they can be found towards an evening and watched where they peirch, if one come about ten or eleaven of the clocke he may shoote as often as he will. they will sit, unlesse they be slenderly wounded. These Turkies remaine all the yeare long, the price of a good Turkie cocke is foure shillings; and he is well worth it, for he may be in weight forty pound; a Hen two shillings."

A high hill near the town of Ipswich still bears the name of "Turkey Hill." Felt, in 1834, states that the "Wild Turkey have disappeared from this vicinity." Bones of the Turkey were found in shellheaps in Ipswich, at Eagle Hill, by Jeffries Wyman,² and at the Treadwell's Island shellheaps by Robinson.³

According to Howe and Allen,⁴ the Wild Turkey "was a common permanent resident in the State until about a hundred years ago. It became very rare in the early part of the nineteenth century, being practically extirpated in the '30's. A few lingered however in the wilder districts about Mounts Tom and Holyoke, and the last specimen actually known to have been captured in the State was shot on Mount Tom in the winter of 1850-'51. It has also been reported as seen on Mount Holyoke as late as 1863, when one was said to have been flushed by a hunting party. Baird, Brewer and Ridgway record it as having been shot at Montague and in other towns in Franklin County 'within a few years,' i. e. prior to 1874."

The Passenger Pigeon (*Ectopistes migratorius*), now rapidly becoming a bird of the past, was in former days very conspicuous from its vast numbers. Higginson writing of Salem, in about 1630, says: "Upon the eighth of March from after it was faire daylight until about eight of the clock in the forenoon, there flew over all the towns in our plantacons soe many flocke of doues, each flock containning many thousands, and soe many that they obscured the light, that passeth credit, if but the truth should be written." And again: "In the

¹ J. B. Felt: History of Ipswich, Essex, and Hamilton, 1834.

² Jeffries Wyman: Amer. Nat., vol. 1, p. 568, 1868.

³ John Robinson: Proc. Essex Inst., vol. 14, p. 161, 1882.

⁴ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 132, 1901.

winter time I have seene flockes of pidgeons, and have eaten of them : They doe fly from tree to tree as other birds doe, which our pidgeons will not doe in England : They are of all colours as ours are, but their wings and tayles are far longer, and therefore it is likely they fly swifter to escape the terrible hawkes in this country." ¹

Wood, writing in 1634, says : "These Birds come into the Countrey, to goe to the North parts in the beginning of our Spring, at which time (if I may be counted worthy, to be beleevd in a thing that is not so strange as true) I have seene them fly as if the Aeyerie regiment had beene Pigeons ; seeing neyther beginning nor ending, length, or breadth of these Millions of Millions. The shouting of people, the ratling of Gunnes, and pelting of small shotte could not drive them out of their course, but so they continued for foure or five houres together : yet it must not be concluded, that it is thus often ; for it is but at the beginning of the Spring, and at *Michaelmas* [September 29th], when they returne backe to the Southward ; yet are there some all the yeare long, which are easily attayned by such as looke after them. Many of them build amongst the Pine-trees, thirty miles to the North-east of our plantations ; joyning nest to nest, and tree to tree by their nests, so that the Sunne never sees the ground in that place, from whence the *Indians* fetch whole loades of them."

Thirty miles northeast of Boston brings us to the region of the Essex Woods mainly composed of white pines—a region where I found Passenger Pigeons in the breeding season in the late seventies.

In the Peabody Academy, at Salem, in one of the cases devoted to the birds of Essex County, is a net which was formerly used by Francis Curtis, at Boxford, for capturing Passenger Pigeons. The last flock taken with this net was in the year 1850.

In 1872, Wild Pigeons were still common as shown by the following interesting quotation : ² "In the period of berries, the wild pigeons visit our Cape in flocks. They are less numerous than in former years, but may be seen sometimes in considerable numbers in several of their old haunts ; particularly in the pines and the pasture south of them, between Pigeon Cove and Lanesville, within and around Brier Swamp, and in the wood between Folly Point and Lanesville one way, and the Willows and the Ipswich Bay shore the other. But a few summers ago there was, one day, a gathering of two thousand people in this last-named locality, listening to a speech concerning the political affairs of our nation. The speaker, General Butler, stood on a slight elevation in the shade of a wild cherry-tree. It seemed that the tree had been previously visited

¹ Francis Higginson : *New England's Plantation*, 1630.

² H. C. Leonard : *Pigeon Cove and Vicinity*, p. 165, 1873.

by pigeons, for its top was thickly studded with black cherries, and in the usual afternoon feeding time of these birds a large flock of them alighted in every part of the tree; and, although evidently surprised to find so great a company of men and women on the ground beneath them, and to hear the general's husky voice sending forth sentences like rattling shot, they made no haste to fly away. Many minutes passed before they returned to their roosts in the tall white-pines of Brier Swamp. The picture of the quiet crowd listening to the orator, the many-colored costumes, the surrounding tall trees and the thick underbrush, the shining waves of Ipswich Bay discerned through a rift of the wood, and the wild pigeons, some with reddish, and some with pale-blue breasts, distributed throughout the cherry-tree's top, is a novel and exceedingly pleasant one in the memory. On the day following that of the gathering, from a cover of oaks and pines near the cherry-tree, a young sportsman shot fifteen of this flock of pigeons." Leonard explains the origin of the name Pigeon Cove as follows: "In the long ago time, when the Cove had no name, immense flocks of pigeons, coming over the sea from New Hampshire and Maine towards the Cape, were enveloped and overwhelmed by a storm, and becoming exhausted fell into the waves; so that after the storm had ceased, large numbers of the dead birds were brought by the waves into the Cove, and thrown upon the rocks and beach. Hence the little indentation became Pigeon Cove; and then the height ascending from it Pigeon Hill."

According to Howe and Allen,¹ the last authentic record of this bird for the State is in 1889 when a pair bred in Plymouth.²

The Northern Raven (*Corvus corax principalis*), now extirpated from Essex County, was formerly common as is attested by several of the early writers.

A few unclassified ornithological references follow. Capt. John Smith³ says, in 1616, that in coasting Cape Ann he saw "Eagles, Gripes, divers sorts of Hawkes, Cranes, Geese, Brantz, Cormorants, Ducks, Sheldrakes, Teals, Meawes, Guls, Turkies, Dive-hoppers, etc., and divers sorts of vermin whose names I know not."

Wood⁴ bursts into ornithological rhyme as follows:

"Th' Eele-murthing Hearne,⁵ and greedy Cormorant,
That neare the Creekes in morish Marshes haunt.
The bellowing Bitterne, with the long-leg'd Crane,

¹ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 16, 1901.

² H. J. Thayer: Forest and Stream, vol. 33, p. 288, 1889.

³ Quoted by F. A. Ober: History of Essex County, by D. H. Hurd, vol. 1, p. 677, 1888.

⁴ Wm. Wood: New England's Prospect, 1634; p. 30 of 1865 reprint.

⁵ Heron.

Presaging Winters hard, and dearth of graine.
 The Silver Swan that tunes her mournfull breath,
 To sing the dirge of her approaching death.
 The tatling Oldwines, and the cackling Geese,
 The fearefull Gull that shunnes the murthering Peece.
 The strong wing'd Mallard, with the nimble Teale,
 And ill-shape't Loone who his harsh notes doth squeale.
 There Widgins, Sheldrackes and Humilitees,¹
 Snites, Doppers. Sea-Larkes, in whole millions flees."

There is much that is admirably descriptive in these terse lines, and it is interesting to learn that even at this early date the destructive tendencies of man had taught the Gull to be "fearefull" and to "shunne the murthering Peece."

William Morrell,² writing in 1623, says:

"The fowles that in those bays and harbours feede,
 Though in their seasons they doe else-where breede,
 Are swans and geese, herne, phesants, duck and crane,
 Culvers and divers all along the maine:
 The turtle, eagle, partridge, and the quaille,
 Knot, plover, pigeons, which doe never faile,
 Till sommer's heate commands them to retire,
 And winter's cold begets their old desire.
 With these sweete dainties man is sweetly fed,
 With these rich feathers ladies plume their head;
 Here's flesh and feathers both for use and ease
 To feede, adorne, and rest thee, if thou please."

Another ancient writer quoted in Hurd's History of Essex County (p. 379), rhymes as follows:

"And then of birds we have great store; the eagle soaring high,
 The owl, the hawk, the woodpecker, the crow of rasping cry,
 The partridge, quail and wood-pigeon, the plover and wild-goose,
 And divers other smaller game are here for man, his use.
 And many more of plumage fair in coo and song are heard;
 The whippoorwill, of mournful note, the merry humming-bird."

Felt, in his History of Ipswich, published in 1834, says (p. 48) under the heading of "Fowl." "Animals of this sort have become far less numerous than

¹ Willets still bear this name.

² Wm. Morrell: Poem on New England, about 1625; p. 129 of 1792 reprint.

they were two centuries past. Some of them, as the Eagle, Crane, and Partridge, have grown scarce. Others, as the Swan and Wild Turkey, have disappeared from this vicinity. In the summer and autumn, Plovers, Curlews, Yellow-legs, Snipes and Sand-pipers, and in winter, Wild Ducks abound. It was anciently the practice for persons in several parts of the colony, to obtain grants of water privileges, and to furnish themselves with suitable gear, for the purpose of taking fowl."

Blackbirds, Crows, and Blue Jays troubled the thrifty husbandman of this region and sundry laws were enacted from time to time to keep them in check. Thus, in 1734, it was voted in the town of Ipswich, that twelve pence a dozen be paid for the heads of such Blackbirds and Blue Jays as should be killed within the town "upon producing them to the treasurer." In 1827, it was voted that ten cents be paid for every Crow killed within the limits of this place.¹ Similar laws were passed by Lynn² and various other towns of the County. The results were not all that could be desired.³ Thus Allen writes: "The traveller, Kalm, relates that Dr. Franklin told him, in 1750, that in consequence of the premiums that had been paid for killing these birds in New England, they had become so nearly extirpated there that they were 'very rarely seen, and in few places only.' In consequence of this exterminating warfare on the 'maize-thieves,' the worms that preyed upon the grass increased so rapidly that in the summer of 1749 the hay crop was almost wholly cut off by them, the planters being obliged to bring hay from Pennsylvania, and even from England, to Massachusetts, to meet the deficiency caused by the worms."

There remain a few miscellaneous references to birds, some of which, especially by the imaginative Josselyn, may fairly be put down as apocryphal. The Rev. William Hubbard,⁴ minister of Ipswich, wrote as follows, in 1680: "The like may be said of feathered fowl, especially such as live upon the water, which abound as much here as in any other place. The bird of the greatest rarity in this place, if not in the world, is a small one, not exceeding the bigness of a great bee, called Humbirds, from the noise they make with their wings, while they are flying from one flower to another to suck out the honey; but never set their feet down. Turkeys also, and pigeons, (that come in multitudes every summer, almost like the quails that fell round the camp of Israel in the wilderness,) partridges, quails, and all birds of prey, by nature's instinct, or by conduct of Divine Providence, have found the way into these ends of the earth."

¹ J. B. Felt: History of Ipswich, Essex, and Hamilton, p. 49, 1834.

² Alonzo Lewis: History of Lynn, p. 144, 1829.

³ J. A. Allen: Bull. Nuttall Orn. Club, vol. 1, p. 54, 1876, quoting from Kalm's Travels, Forster's translation, vol. 2, p. 78.

⁴ Wm. Hubbard: The History of New England from the year 1620 to the year 1680; p. 29 of 1878 reprint.

Josselyn means the Kingbird or perhaps the Purple Martin when he says¹: "There is a small Ash-colour Bird that is shaped like a *Hawke* with talons and beak that falleth upon *Crowes*, mounting up into the Air after them, and will beat them till they make them cry." The following is also intelligible:² "The singing Birds are *Thrushes* with red breasts which will be very fat and are good meat, so are the *Threessels*, *Filladies* are small singing Birds, *Vinnmurders* little yellow Birds . . . and *Starlings* black as *Ravens* with scarlet pinions." What he means by the following is somewhat obscure: "The *Colibry*, *Temalin*, or rising or walking Bird, are emblem of the Resurrection, and the wonder of little Birds."

The Hummingbird was evidently a marvel in the eyes of the early explorers. Thus Wood says: "The Humbird is one of the wonders of the Countrey, being no bigger than a Hornet, yet hath all the demensions of a Bird, as bill, and wings, with quills, spider-like legges, small claws: For colour, she is as glorious as the Raine-bow; as she flies, she makes a little humming noise like a Humble-bee: wherefore shee is called the Humbird."

The earliest local list for Essex County is the Catalogue of Birds noticed in the Vicinity of Lynn during the Years of 1844-'5-'6, by J. B. Holder, published in 1846, by the Lynn Natural History Society. This is a list of 185 species. The only list of birds for the whole of Essex County is that of F. W. Putnam entitled Catalogue of the Birds of Essex County, Massachusetts, and published in the Proceedings of the Essex Institute, volume 1, page 201, 1856. He gives as birds of the County, 235; accidental visitors, 10; making a total of 245. Twelve of these are omitted in my list as of doubtful, erroneous, or apocryphal record. Putnam states that there were 48 other birds known to have been found in the State but not in Essex County, making a total for the State, according to him, of 293. Robinson,³ in his introduction to Hurd's History of Essex County, in 1888, put the number of birds for Essex County at 266.

Mr. C. J. Maynard published, in 1870, in his Naturalist's Guide, a Catalogue of the Birds of Eastern Massachusetts, and although this includes much more than Essex County, it is of especial interest here, as the author had for several years been living at Ipswich, and many of the observations were made there. In this list, in the edition of 1873, page 161, he states that "the whole number of birds belonging to the fauna of eastern Massachusetts is two hundred and ninety-nine, as will be seen by the Catalogue." In this connection it is

¹ John Josselyn: An Account of two Voyages to New England, 1675; p. 275 of 1833 reprint.

² John Josselyn: *ibid.*, p. 278.

³ John Robinson: in Hurd's History of Essex County, Massachusetts, vol. 1, p. lxxxii, 1888.

interesting to trace the increase in the number of recognized species of birds for the State as given in the following table from Dr. J. A. Allen's¹ List for 1878.

1833	Emmons	157 species.
1837	Brewer	197 "
1839	Peabody	251 "
1856	Putnam	275 "
1864	Samuels	261 "
1864	Allen	282 "
1870	Allen	295 "
1870	Maynard	289 "
1875	Brewer	308 "
1878	Allen	316 "

In 1886, Dr. Allen² gave a list of 340 species, 4 extirpated, 19 of probable occurrence, 1 doubtful, and 4 introduced.

The latest list for the State, published in 1901, is that of R. H. Howe, Jr., and G. M. Allen.³ This was :

Recognized species	362
Extirpated species	4
Extinct species	2
Introduced species	15
Species erroneously recorded	17
Apocryphal species	2

One of the most interesting ornithological events in Essex County was the discovery by Mr. C. J. Maynard, in 1868, of the Ipswich Sparrow. The names of other ornithological workers in these fields,—and there are many,—are given in the bibliography and in the list of correspondents in the introduction to the Annotated List. Mr. George O. Welch is the only living worker of a veteran band of collectors and taxidermists who have added so much to our knowledge of the ornithology of Essex County. Jillson, Tufts, and Vickary are no longer living.

Before closing this chapter, a few remarks on my own observations on the changes in the birds of the County during the last twenty-eight years may be added. Changes of this sort generally occur so slowly that it is difficult to

¹ J. A. Allen : Proc. Essex Inst., vol. 10, p. 10, 1878.

² J. A. Allen : Bull. Amer. Mus. Nat. Hist., vol. 1, p. 221, 1886.

³ R. H. Howe, Jr., and G. M. Allen : The Birds of Massachusetts, 1901.

recognize them, and sweeping statements are sometimes made from impressions that are often erroneous. There is no doubt, however, but that the shore birds have diminished in numbers during these years, yet years of plenty occur now, and years of scarcity occurred twenty-five years ago. A July and August free from easterly storms, and with few thunder showers, will allow many of the shore birds to omit our shores from their feeding and resting places, — and they are dangerous ones for them, — and to fly south outside. This was largely the case in 1904, while in 1903 there were more than twice as many shore birds to be found here.

While the Gulls and Terns diminished during the early years of this period, they have noticeably increased during the last few years, owing to the efforts of the Audubon Society in influencing public sentiment on the subject of Terns' feathers in hats, in protecting the birds from being shot here, and especially in safeguarding their breeding places on the rocky islands of the Maine coast. Although many of the Ducks show sadly diminished ranks, the Scoters are often as abundant during the migrations as they were twenty-five years ago.

The establishment of public reservations where shooting is forbidden, is doing a great deal to bring back former conditions. The Ducks are learning the security of the ponds, and the shore birds and Gulls are flocking to the beaches thus protected.

Of the Hawks, the numbers are constantly diminishing, owing to the cutting off of the large nesting-trees, although the Red-shouldered Hawk holds its own remarkably well. The most obvious changes have occurred among the smaller birds owing to the unfortunate introduction of the English Sparrow. In the late seventies none of these pests were to be found in villages like Magnolia, and they remained in the larger cities until early in the eighties. Then they spread to the smaller towns and villages, and they are now taking up their residence in outlying farms. Wherever they go, they take possession sooner or later of all bird boxes, driving out Purple Martins, Tree Swallows, House Wrens, and Bluebirds. As a consequence these useful and beautiful native birds have all diminished in numbers, with the possible exception of the Bluebird, which, after its decimation by the storms in 1896, has apparently entirely recouped itself. Tree Swallows, while they have diminished very much in towns and villages, still gather in undiminished numbers in the autumn migrations along the seashore. While many of the smaller birds, particularly the box-dwellers, have been persecuted and driven out by the English Sparrow, the Baltimore Oriole and Warbling Vireo, dwelling high up in the tall elms, hold their own. The Bronzed Grackle has apparently increased in the vicinity of man, and appears to be held in dread by the English Sparrow, on whose fat nestlings the Grackle undoubtedly occasionally dines. The Rose-breasted Grosbeak has certainly increased in num-

bers to a considerable extent in the last quarter of a century, and the same is true to a less degree of the Golden-winged Warbler.

Another alien biped has made inroads among our song birds both with the gun and with bird-lime. I refer to Italian workmen who are employed so largely of late years in some parts of the County. They shoot every bird in sight from a Chickadee to a Robin. One arrested in the Swampscott Woods on November 3d, 1903, had twenty-three Robins in his possession! Still another alien has indirectly diminished the native birds, namely the gipsy moth. In the efforts to exterminate this pest, the underbrush at Swampscott has been cut and burned, interfering with the breeding places of such interesting birds as the White-eyed Vireo and Yellow-breasted Chat.

The prolonged rain storm of June, 1903, nearly exterminated the Purple Martins of Essex County, and it is doubtful if they will return, as the English Sparrow is in full possession of many of their houses. The Swifts, Red-winged Blackbirds, Tree Swallows, Have Swallows, and many other birds suffered by the same storm, and some of our resident birds were decimated by the unusually severe winter that followed. In fact, there would be scarcely a Bob-white in the County to-day, if a fresh stock of this bird had not been introduced by sportsmen the following spring.

CHAPTER X.

ANNOTATED LIST OF THE BIRDS OF ESSEX COUNTY.

INTRODUCTION.

IN the List of the Birds of Essex County I have availed myself of six sources of information, as follows: (1) published records; (2) written and verbal communications; (3) collections of specimens; (4) sportsmen's records; (5) lighthouse records; (6) personal observations.

(1) The references to published records are given in the list, and the whole bibliography is arranged at the end of the memoir in alphabetical order by authors.

(2) I am indebted to a great many individuals for generously furnishing me with notes and observations on the birds of Essex County, and to some for specimens. To all of these I wish to express my sincere thanks. Their names are as follows: W. P. Alcott, Carolyn E. Allen, F. H. Allen, G. M. Allen, Outram Bangs, C. F. Batchelder, F. G. Blake, M. C. Blake, Harold Bowditch, T. S. Bradlee, William Brewster, Laurence Brooks, C. E. Brown, A. P. Chadbourne, M.D., H. F. Chase, A. H. Clark, Walter Deane, J. M. Dodge, A. A. Eaton, Guy Emerson, R. S. Eustis, J. A. Farley, Walter Faxon, Gertrude B. Goldsmith, Lila G. Goldsmith, J. L. Goodale, M.D., S. D. Gray, J. H. Hardy, Jr., Ralph Hoffmann, R. H. Howe, Jr., W. A. Jeffries, C. H. Keith, F. H. Kennard, H. W. King, Sarah E. Lakeman, R. C. Larcom, C. W. Loud, G. M. Magee, C. J. Maynard, F. B. McKechnie, L. Moses, J. T. Nichols, S. M. Noyes, W. R. Peabody, J. C. Phillips, M.D., H. A. Purdie, A. L. Reagh, M.D., C. H. Russell, Ellen W. Sayward, J. H. Sears, L. A. Shaw, H. M. Spelman, A. F. Tarr, Bradford Torrey, H. M. Turner, W. H. Vivian, M. A. Walton, T. W. Wardley, G. O. Welch, T. C. Wilson, G. L. Woodbury, H. W. Wright, C. O. Zerrahn.

(3) I have examined the following public collections of specimens: Peabody Academy of Science at Salem, Essex County collection, a very large and interesting one; Boston Society of Natural History, New England collection; Museum of Comparative Zoology, at Cambridge; Public Library of City of Lawrence, collection belonging to Lawrence Natural History Society; Ipswich Historical Society, small collection made by Mr. Joseph I. Horton; Lynn Natu-

ral History Society, the battered remains of the collection formerly belonging to this society, long since disbanded; collection of Brookline High School.

I have also examined the private collections of the following: William Brewster, Cambridge; H. M. Spelman, Cambridge; C. F. Batchelder, Cambridge; W. A. Jeffries, Boston, mostly collected by the late Dr. J. A. Jeffries; Dr. A. P. Chadbourne, Boston; Dr. J. L. Goodale, Boston; of the late Dr. Charles Palmer, Ipswich; Dr. F. H. Stockwell, Ipswich; C. H. Houghton, Rowley; Richard Lufkin, Gloucester; and my own collection in Boston.

(4) The gunners who shoot for pleasure or for the market or cater to visiting sportsmen with blinds, decoys, and ducking-boats, or the men left in charge of live decoys at ducking-blinds have opportunities that the most zealous scientific collector lacks. They are on the grounds with gun in hand throughout the entire season, often staying in the blinds all day long. Their observations, if they could be relied upon, would be of the greatest value, but unfortunately in many cases their lack of scientific accuracy is plainly apparent. With the best intentions, ignorance of the specific differences, often slight, combined with an inaccurate memory and an enthusiasm for the sport, tend to render many of their observations of doubtful value. In fact, I regret to say, some gunners appear to prefer romancing (to put it mildly) to telling the truth, for gunners, like fishermen, are noted for their good stories.

Another difficulty arises from the fact that there are so many names, often very local, for the waterfowl and shore birds. In the following list I have endeavored to record some of these names. Meeting the gunner in the field and actually seeing his freshly killed birds, one obtains of course reliable records. The statement that such and such a bird was shot and is now in a certain collection can of course be definitely shown to be true or false. There is, however, one well known case in Essex County where even this test was found to be valueless, for the wretched collector had obtained rare bird skins from a distance, and fraudulently palmed them off as birds of this locality. The fraud was fortunately soon discovered, and the criminal held up to the deserved finger of scorn in the pages of *The Auk* (vol. 1, p. 295, 1884). This happened some twenty years ago, in 1884.

I have been so fortunate as to obtain from Dr. John C. Phillips, a good ornithologist as well as sportsman, the careful and accurate records of his shooting-stand at Wenham Lake for the years 1900 to 1904 inclusive, already detailed in Chapter VII. I am also indebted to Mr. Thomas C. Wilson, a professional gunner at Ipswich, for observations, records, and specimens. His knowledge of shore and sea birds, extending over thirty years, is unusually good, and his statements I have always found to be conservative and reliable.

(5) The lighthouse records I have already spoken of in Chapter VIII.

(6) My own personal observations and records in Essex County began with a summer spent partly at Danvers and partly at Marblehead, in 1875. Four summers were spent at Magnolia, 1876 to 1879 inclusive, and occasional visits were made during the winter to this region, extending on several occasions to a week in duration. My ornithological excursions in these years, which were years of active collecting represented now by specimens and notes, extended from Manchester along the coast to the end of Cape Ann and through the Essex Woods, then regularly frequented by the Passenger Pigeon, to Coffin's Beach and the Essex Marshes.

From 1880 to 1892, there is, with a few exceptions, a gap in my own records for this region, but since then I have spent my summer vacations at Ipswich, and have made as many winter expeditions there as possible from my home in Boston, visiting also other parts of the County in both summer and winter. Although these visits in winter have necessarily been brief, not over twenty-four or thirty-six hours long, and generally not oftener than once a month, yet in the series of years I have covered at least every week of the winter. Visits in spring and autumn have been much more frequent.

In the following list, the species are numbered consecutively and a second number, which is bracketed, is that of the Check-List of the American Ornithologists' Union whose nomenclature, corrected up to July, 1904, is used. The names enclosed in quotation marks are those that are familiarly used in Essex County, some being quite local. The earliest and latest dates of arrival and departure are given, very unusual dates being in parentheses. In some cases the average date for a number of years is entered, and further particulars are often to be found in the annotations. The dates following the word *Eggs* are dates between which eggs have been found in the County. All dates are from records in my possession. The observations of habits, and so forth, are my own, unless otherwise stated. Where published records are mentioned, the references are always given.

Extinct and extirpated species are introduced in the proper order, and have the Check-List number, but they are not numbered with the recognized species and are distinguished by being put in smaller print. The species of doubtful and of erroneous record are designated in the same way, the text showing to which class the particular species belongs.

ANNOTATED LIST.

1 [2] *Colymbus holbœllii* (Reinh.).

HOLBÆLL'S GREBE.

Not uncommon winter visitor ; October 15 to May 24.

This is the least common of the three Grebes in Essex County. During the migrations it occasionally visits the ponds, but it is more frequently found in the salt water. As many as five or six may sometimes be seen together in the autumn off Ipswich Beach. In habits it closely resembles the Horned Grebe.

The bird with which the Holbœll's Grebe is most likely to be confused on the seashore, is the Red-throated Diver, but its smaller size and especially its shorter bill and more delicate neck distinguish it on the water. In flight, the white patch on the wing of the Grebe at once distinguishes it from the Diver. It differs from the Horned Grebe in being considerably larger in size.

2 [3] *Colymbus auritus* Linn.

HORNED GREBE ; "DEVIL-DIVER" ; "HELL-DIVER."

Common winter visitor ; October 1 to May 6.

Although common off sandy beaches and in salt creeks, the Horned Grebe is most often found in winter along rocky shores, singly and in small flocks. During the migrations, when, like many other winter sea birds, it is most abundant, it also swims in ponds and rivers, but less often than its fresh-water cousin, the Dabchick. On October 1st, 1904, Dr. J. C. Phillips saw a flock of twenty-six of these birds at Wenham Lake, and I saw as many as forty-three together that same October off the beach at Ipswich. Such numbers are, however, unusual.

The common names of the Grebe are due to its skill in diving at the flash of the gun, eluding even the swift shot. This, although it seems impossible, is true even where the modern breech-loading gun is used. The bird apparently sees the flash at the muzzle of the gun and dives before the shot reaches it. Of course with the old flint-lock the bird had plenty of leisure to escape under water.

The canny gunner waits till the bird dives, then runs down perhaps by two or three stages to the water's edge, and if he is so fortunate as to see the bird before it sees him, and to fire just as it emerges from the water, the deed is done. The same tactics followed by the bird-watcher, who remains motionless and prone when the bird is above water, will often allow of a close approach.

The diving of this Grebe is often a beautiful piece of work. The bird springs vigorously upward and forward, the bill cleaves the water on the downward curve just as the feet leave it, while the whole body describes an arc. The wings are closely applied to the sides, and do not flop out as in the *Alcida*, where they are used for flight under water. In the Grebes the feet are the propelling power in the forceful initial spring, and in the movements below the water. That the wings are kept close to the sides under water I have been able to observe when the Grebes were borne up in the advancing rollers on Ipswich Beach. The clear water before the waves broke revealed the diving birds. The full beginning of the dive, as described above, is often curtailed in all degrees, so that the head is below water before the feet emerge, or the jump is lost entirely, and the bird disappears suddenly with a vigorous kick, or mysteriously and quietly *sinks* in the water. The duration under water depends somewhat on its depth as well as on the abundance of food there. Thus a Grebe close to the rocks stayed under from 30 to 35 seconds, while the same bird a short distance out was under water from 45 to 50 seconds each time. They often remain below the surface longer than this.

Grebes ride buoyantly on the surface, looking about inquisitively, occasionally peering into the water, and frequently shaking the head nervously from side to side. A foot is sometimes raised over the back in a comical manner, or they turn partly over to preen themselves.

One may sometimes find a Grebe asleep with bill and half his head thrust down into the feathers of the breast. I have seen a bird thus asleep heading up into the wind and keeping in the same place by the alternate paddling of the legs, the shining, silky breast showing conspicuously. At first sight it looked like a buoy partly coated with ice, with a black knob, the head, on top. The fact that it was stationary on the waves added to the illusion. A loud whistle served to make the bird extract its head from the feathers and look about.

Horned Grebes, like the other members of the family, are very rarely seen flying, preferring to escape by diving and swimming off. It is very difficult for them to get under way in flight, and they patter along the water for some distance, running as it were, on the waves, using the feet alternately.

Besides grass and other vegetable matter, beetles, and small crustaceans, I have found numerous feathers in these birds' stomachs. The feathers were apparently plucked from their own breasts.

The Horned Grebe is intermediate in size between the Holbøell's Grebe, which is considerably larger, and the Dabchick which is only a little smaller. The latter bird is, however, very rarely to be found on the ocean, and may be distinguished also by its brownish upper breast. All the Horned Grebes seen in the autumn are in immature or winter plumage. In flight, the white tips of the secondary wing feathers are noticeable.

3 [6] *Podilymbus podiceps* (Linn.).

PIED-BILLED GREBE; DABCHICK; "HELL-DIVER"; "WATER-WITCH."

Transient visitor, rare in spring, common in autumn; spring; August 9 to December 1.

It is possible that this Grebe breeds in Essex County, but I have no direct evidence of it. The August 9th record was of a young female shot by J. A. Jeffries, at Swampscott, in 1879.

The Dabchick frequents fresh water, rarely being found on the ocean. I have, however, a specimen I shot off the rocky shore at Swampscott, on October 7th, 1883. Its habits are similar to those of the Horned Grebe. It is a ready diver and like that bird it can also sink below the surface without diving. My notes of November 5th, 1882, of a bird observed in the Shawsheen River, illustrate this latter habit. While sitting on the bank I several times noticed a movement in the water like the quick motions of an animal coming to the surface to breathe. Presently for a very brief space of time a Dabchick appeared on the surface, but as quickly disappeared by quietly sinking in the water. After that, although I watched for half an hour, I did not see the whole bird again, but several times saw its bill projecting above water for a moment for a breath of air.

The small size and grebe characteristics as well as the brownish upper breast easily distinguish the Dabchick from other waterfowls. Its bill is stouter and less pointed than that of its cousin the Horned Grebe.

Podiceps cristatus Lath. CRESTED GREBE. An Old World species erroneously noted by many of the older writers. Putnam¹ enters it in his Essex County list as "Winter. Common," and Maynard² records it as "Common during autumn and winter." There is not a specimen in existence of American origin.³

¹F. W. Putnam: Proc. Essex Inst., vol. 1, p. 223, 1856.

²C. J. Maynard: The Naturalist's Guide, p. 158, 1870.

³T. M. Brewer: Bull. Nuttall Orn. Club, vol. 3, p. 52, 1878.

4 [7] *Gavia imber* (Gunn.).

LOON ; GREAT NORTHERN DIVER.

Abundant transient visitor, common in winter ; a few non-breeding birds pass the summer ; September 1 to June 5 (July and August).

The Loon is a familiar bird along the coast. In the migrations they fly singly and in flocks of four or five, while on rare occasions as many as twelve have been seen together. At these seasons they occasionally drop into the ponds but as a rule the ocean is where they are chiefly to be found. One may be at some distance from the water and hear their loud mournful call, and looking up, see these huge, cutter-built birds piercing the air with great speed. Their long pointed bills and necks are stretched straight out in front, their great feet stick out like a rudder behind, and their small pointed wings move with marvelous rapidity to support the great body. I remember years ago at Manchester shooting one of these fellows as he flew over a field on a winter's morning. Although he was killed, his impetus carried him a long distance, and he finally brought up at a stone wall. As a rule the shot patter harmlessly against the well feathered sides of these birds, a fatal penetration occurring only by a lucky or unlucky accident. On the water it is almost impossible to shoot them, owing to their wariness and the rapidity with which they dive. In fact they are approaching the wingless condition, as they are more at home under the water than in the air, and it is evident that they can advance faster under water than on its surface. Thus on one occasion I was watching a Loon swimming about, dipping his head under water from time to time on the lookout for food. The cry of another Loon was heard at a distance and my friend immediately dove in the direction of the other, and, appearing on the surface for a moment, dove again and again until he reached his companion. At another time on the Maine coast while watching a flock of young Red-breasted Mergansers swimming off the shore, I noticed a movement as of a large fish on the water outside. The Mergansers at once flapped in alarm along the surface of the water towards the shore where I was hidden and I soon saw that a Loon was chasing them, following them under water. The Mergansers gained the shore and scrambled up on the rocks, while the disappointed Loon swam about outside. On calm days Loons do not rise from the water, and they are probably unable to do so. A fisherman told me of catching a Loon on a calm day in a narrow inlet of the ice from which escape by diving was impossible.

Nothing is more weird and mournful than the wail of this bird heard at night, or more diabolical than its ringing "laughter" as it is called.

Their larger size distinguishes them from the Red-throated Diver, but on the ocean, size is often deceptive. In the adult plumage, however, there is no difficulty in distinguishing the birds, and generally the larger body and head in proportion to the neck make it easy to recognize them. In the immature and winter plumage, the absence of white spots on the back serves to distinguish the Loon from the smaller Diver. Moulting takes place and the white spots begin to appear as early as the middle of February.

[9] *Gavia arcticus* (Linn.). BLACK-THROATED DIVER. An arctic bird rare or casual in winter in the northerly parts of the United States. Given by Putnam¹ as "Adult, rare." It is probable that young of *G. lumme* were mistaken for it, although its occurrence on the coast is not impossible. I can, however, find no specimens for Essex County to confirm this supposition, and the bird is excluded from Howe and Allen's List.²

5 [11] *Gavia lumme* (Gunn.).

RED-THROATED DIVER; "CAPE RACE"; "CAPE RACER"; "SCAPE-GRACE."

Abundant transient visitor in the autumn, uncommon in late winter and spring; August 27 to April 8.

The Red-throated Diver is a lover of salt water, very rarely, in Essex County, entering the fresh-water ponds and rivers. In the autumn, flocks of from three or four up to a dozen, all in immature and winter plumage, are commonly to be found feeding off the beaches.

In habits and call notes they closely resemble their larger cousin. I have sometimes amused myself, as also with the Loon, by calling or "tolling" in a flock of these birds by sitting still on the shore and waving a hat or handkerchief on a stick. When the birds see the handkerchief they huddle together, appear to look at each other enquiringly, utter in low and conversational tones their laughing cry, and begin to swim slowly in towards the curious object, frequently pausing to talk it over. About one hundred and fifty yards is the nearest point to which I can entice them.

Like all waterfowl, the Red-throated Diver devotes much time to preening his feathers and hunting for concealed enemies. One may often be seen turning over nearly on his back with one leg waving frantically in the air, the other in the water keeping the balance, while the bird vigorously preens the feathers of the breast and abdomen. The sudden change in appearance, owing to their

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 223, 1856.

² R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 21, 1901.

turning belly upwards, from a dark bird to a white one is at first confusing. They frequently stand up erect in the water and flap their wings, or lie low washing the water through their wing feathers. When fishing they swim along, thrusting their long bill and head from time to time into the water looking for the fish, and suddenly disappear with but little apparent effort, leaving only a ripple behind them. Sometimes they bring the fish to the surface and seem to have difficulty in swallowing it, occasionally dropping it on the water and picking it up again.

Stearns and Coues¹ mention a perfect albino, in the collection of Mr. Ruthven Deane, which was shot in Salem Harbor.

The differential points in the recognition of the Red-throated Diver are given under Loon and Holbæll's Grebe.

6 [13] *Fratercula arctica* (Linn.).

PUFFIN; "SEA PARROT"; "PAROQUEET."

Not uncommon winter visitor; October 16 to March.

The Puffin, while on our coast, prefers the waters off the rocky headlands, especially at the end of Cape Ann. There is, however, a specimen in the collection of the Peabody Academy, taken in Plum Island River,—the sound back of Plum Island,—on February 15th, 1884. At Rockport the fishermen are familiar with this bird and call them "Paroqueets."

Puffins ride lightly on the water and are expert divers. They are tame birds and easily approached. Their flight is rapid and direct, the bird often swaying first to one side and then to the other like all the *Alcidae*.

Puffins look like small Ducks, very short and chubby and entirely destitute of neck. In the late winter the light gray, almost white, of their cheeks contrasts with the black ring or collar, while in the fall and early winter this contrast, although plainly visible, is not so marked, for the cheeks are darker, more mouse color. The bill, too, which in nuptial plumage is so large and parrot-like, is considerably smaller in winter, but is still characteristic in shape.

¹ W. A. Stearns and Elliott Coues: New England Bird Life, part 2, p. 390, 1883.

7 [27] **Cepphus grylle** (Linn.).

BLACK GUILLEMOT; "SEA PIGEON."

Common winter visitor; September to April 19.

This bird is to be found off rocky shores, as at Rockport on the end of Cape Ann and less frequently off Nahant. It is a shy bird and difficult to approach. It is generally seen singly or two or three together. While swimming, the Sea Pigeon nervously ducks its head at frequent intervals, appearing to be dabbling at the water. It goes under water with a flop, both wings partly spread so as to be ready for the first stroke, for, like all the *Alcidae* and unlike the Grebes, it actually flies through the water, using its wings for propulsion. The small dark tail bobs up as the bird disappears, and on rear view its red feet may sometimes be seen. Its aerial flight is very direct, generally close to the water, and its short pointed bill, and especially the white of the wing, are very conspicuous. It generally sways slightly from side to side in flight. Just before alighting it often circles about, glides, flaps its wings quickly, and suddenly settles on the water. I have seen two chasing each other off Rockport in January making the water foam. Occasionally one would dodge the other by diving under water, reappearing quickly a few yards off. I once saw two squatting side by side on a partly submerged timber floating in the sea, and my companion mistook them for wooden decoys.

The only sound I have heard the bird utter is a hissing or whistling sound when suddenly alarmed.

The Black Guillemot is in the white or mottled white plumage during most of its stay on the Essex County coast, and for that reason may escape notice on a sea covered with white-caps. In April, birds may be found that still retain most of the whiteness of winter, while others have nearly completed their spring moult. There is a specimen in the Peabody Academy at Salem, collected April 6th, 1891, at Marblehead, which is in full black summer plumage. In this plumage it is easily recognized as it is totally black and has a large white wing patch which is plainly visible when the bird is swimming as well as when it is flying. This wing patch is also noticeable in the winter plumage as the rest of the wing even then is dark. Its small size, short neck, and pointed bill distinguish it in any plumage. I have seen its red legs both as it flew and just as it dove. The other white sea bird in winter with which it might be confused is the Old Squaw, but the larger size, longer neck, and the head markings of the latter bird distinguish it.

[30] *Uria troile* (Linn.). MURRE. This bird is stated by Putnam¹ and by Maynard² to be not uncommon in winter off the coast. I have not observed the bird here and have seen no specimen from the County. Howe and Allen omit it from their list of the birds of Massachusetts.

8 [31] *Uria lomvia* (Linn.).

BRÜNNICH'S MURRE; MURRE; "ICE-BIRD."

Not uncommon winter visitor; November 21 to February 21.

The Brünnich's Murre is to be found in winter off rocky promontories, especially that of Cape Ann. I have, however, seen several in Lynn Harbor and I once picked one up dead on Ipswich Beach. They are generally very tame and unsuspicious birds.

Herbert K. Job³ relates: "One bitter December morning, with the mercury at zero, I watched a group of Murres in Lynn Harbor, off Nahant. There was a channel-post that sloped considerably with the tide, and these Murres would waddle up the incline, sit awhile, then dive headlong, and climb up again seeming to greatly enjoy the sport."

The only bird for which the Brünnich's Murre could be mistaken on this coast is the Razor-billed Auk. The points of distinction will be considered under that bird.

9 [32] *Alca torda* Linn.

RAZOR-BILLED AUK; "TINKER"; "ICE-BIRD."

Not uncommon winter visitor; November 22 to February 11.

There is a record in the catalogue of the Peabody Academy collection of a head of this bird found on Ipswich Beach as late as April, in 1885. This of course gives no clue to the time when the bird was alive. They undoubtedly stay later than February 11th, but that is the latest record I have.

The first time I saw these birds on our coast was in November, off the beach at Ipswich. There were three of them and I made a note of their black backs and heads and pure white breasts, that their bills appeared pointed and

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 222, 1856.

² C. J. Maynard: The Naturalist's Guide, p. 159, 1870.

³ H. K. Job: Among the Water-Fowl, p. 92, 1903.

that they paddled along like the chunky Little Auk. I labeled them Brännich's Murres or immature Razor-billed Auks and drew a rough sketch of one of them. Learning some time later that the cocked-up tail of the Auk when swimming always distinguishes him from the Murre I sought my notes. The sketch showed a tail pointing vertically upwards! The lesson is obvious. In the adult, the larger bill of the Auk distinguishes the bird from the Murre, but in the immature Auk the bill is almost as small as that of the Murre. Both birds are short-necked and stout, black above and white below.

[33] *Plautus impennis* (Linn.). GREAT AUK; "PENGUIN." Long since extinct but formerly common on our shores (see page 60).

10 [34] *Alle alle* (Linn.).

DOVEKIE; LITTLE AUK; "PINE KNOT"; "KNOTTY"; "ICE-BIRD."

Winter visitor, varying irregularly from uncommon to abundant; November 4 to April 30.

Although the Dovekie is found every winter off the coast, especially at the end of Cape Ann, it is only exceptionally that it is found in numbers near the beaches and general coast line. By sailing off from Rockport in winter one may find them outside of the Salvages which are three miles from Rockport, and sometimes a few may be seen nearer shore than this. In the exceptional years Dovekies are found abundantly not only along the whole coast, but even in the harbors, creeks, and rivers, and they not infrequently reach the ponds and marshes several miles from the sea.

One of the largest visitations of the Dovekies was in the winter of 1877-78, and I found them common at Magnolia then and took note of their interesting ways. They were very tame and unsuspicious, permitting a close approach. They occurred singly and in small flocks. From a point above them on the rocks I watched them use their wings in flight under water, and they preferred to escape in this way when disturbed. They rarely resorted to aerial flight. The only time I heard any of them make a sound was on one occasion when after firing my gun from a rock jutting out over the ocean, a Dovekie came swimming by uttering a sharp cry. One little fellow I saw flit into a rocky cove at low tide, and drop down among the seaweed, where he was found and dispatched with a stick. When shot at on the water they dive at the flash and escape unless the gunner is within close range. I remember wading out in the chilly December water on a gently sloping beach at Manchester, so as to get

close to the birds before firing. The flight of the Dovekie is swift and direct, generally close to the water and with the swaying motion of the other *Alcidæ*. The small black wings, altogether out of proportion to the plump body, move with marvellous rapidity. I have noticed that they spread their little tails as they dive.

The dead bodies of these birds, intact or partly devoured, were commonly found near the shore and even some distance inland during the invasion of 1877-78, and I have occasionally found them since. Some of the birds evidently died of starvation, others were killed by Hawks.

The Dovekie is at once distinguished from all other waterfowl by its small size, short neck, and generally compact and plump form. It is indeed a charming little bird to meet several miles from land on the wintry sea, and its confiding ways allow us to make its near acquaintance.

[35] *Megalestris skua* (Brünn.). SKUA; "SEA-HEN." It is possible and probable that in storms the Skua approaches so near the coast that it should be included in the list of Essex County birds, but my records at present will not allow it without stretching the boundary of the County very much to seaward. I merely note here, however, from Capt. Collins:¹ "It is by no means abundant on any of the fishing-grounds, but is, nevertheless, to be met with occasionally all the way from George's to the Grand Banks, at least." He notes also: "*November 27, 1878. Latitude 42° 49' N., longitude 62° 55' W. Two skua gulls . . . came near the vessel.*" This must have been about 370 miles off the mouth of the Merrimac River.

11 [36] *Stercorarius pomarinus* (Temm.).

POMARINE JAEGER.

Not uncommon transient visitor; spring; July 5 to September 28.

A female of this species was taken on the Merrimac River² on July 5th, 1889. There are two in the Peabody Academy collection, one taken off Eastern Point on September 28th, 1864, the other at Swampscott.

As this Jaeger differs from the Parasitic only in being slightly larger, the various phases of plumage being the same, it is difficult to distinguish them in life unless they are together.

¹ J. W. Collins: U. S. Comm. of Fish and Fisheries, Report for 1882, pp. 311-331, 1884.

² [F. B. Webster, ed.]: Ornithologist and Oologist, vol. 14, p. 176, 1889.

12 [37] *Stercorarius parasiticus* (Linn.).

PARASITIC JAEGER; "MARLING-SPIKE"; "SEA-HEN."

Common transient visitor; — to June 25; July 4 to October 14.

My July 4th record is of a specimen shot by J. A. Jeffries at Swampscott, in 1873.

This is the common Jaeger of the coast. They are often to be seen off Cape Ann and not uncommonly off Ipswich Beach, engaged in their occupation of chasing the Terns and Bonaparte's Gulls. Their flight is rapid and graceful, and decidedly hawk-like. The victim twists and turns but all in vain, and at the last minute drops the fish, which is at once seized by the Jaeger. Terns not infrequently chase the Jaegers in return, and the two twist about in a bewildering way, each trying to rise above the other, the Tern screaming incessantly. I once saw at Magnolia a Jaeger chase a Crow, frightening it half out of its wits. At another time at Ipswich some Terns were being chased by immature Jaegers who were in turn pursued by an adult Jaeger. Only once have I seen Jaegers alight on the beach, and this was in a severe northeaster, on June 17th, 1903, when I found ten on the beach at Ipswich. Six or seven of these appeared to be full adults.

The Jaegers are easily recognized by their hunter-habits. The resemblance to a Hawk is increased if the bird be in the immature brown plumage. The adults in light plumage, with their dark backs, white breasts, a more or less complete ring about the throat, and long black central tail feathers, are objects of great beauty.

13 [38] *Stercorarius longicaudus* Vieill.

LONG-TAILED JAEGER.

Rare transient visitor.

I have an immature, brown plumaged bird in my collection, kindly given me in the flesh by Mr. H. A. Pitman, who shot it on August 24th, 1901, at Eagle Hill, Ipswich. The bird was flying over his decoys in the salt marsh. In this plumage the bird is difficult to distinguish from the immature Parasitic Jaeger, except by the color of the primaries. Mr. William Brewster kindly identified my specimen.

[39] *Pagophila alba* (Gunn.). IVORY GULL. Mr. George O. Welch tells me that he distinctly remembers one of these Gulls shot by a fisherman off Swampscott fifty years ago or so, and brought to Jillson, who mounted it. What became of the specimen he does not know.

14 [40] *Rissa tridactyla* (Linn.).

KITTIWAKE; "PINNY OWL"; "WINTER GULL."

Common winter visitor; September 6 to March 10.

My earliest date is of a bird shot at Ipswich Beach by a gunner on September 6th, 1903. They do not become common until the middle of October.

The Kittiwake is an off-shore Gull, one that is to be found especially about fishing vessels in winter, gleaning the waves for the refuse which is always to be found in the neighborhood of these boats. In my notes of a trip to Nova Scotia from Boston, in December, 1883, I have entered that they were very abundant everywhere off the coast. Off Rockport in winter, Kittiwakes begin to be common two or three miles from land, and are generally abundant on the fishing grounds eight or ten miles out. They may, however, be frequently seen from the shore, especially if the day be stormy and the shore an open one. They often visit the little harbor of Rockport with its wealth of fish gurry. They also fly occasionally over the beaches and under these circumstances I have had no difficulty in shooting them for specimens, as, unlike the Herring Gull, they do not hesitate to fly within gunshot. I have never seen them in the tidal estuaries.

The flight of the Kittiwake is swift and graceful, and is at times flickering and tern-like, especially when the bird is picking up food from the water. They are easily attracted about a boat by throwing out pieces of fish-livers, and then they can be observed at close range.

The following interesting notes on the habits of the Kittiwake as observed in Essex County, were published by Mr. Brewster,¹ in 1882: "Some fishermen whom I lately employed to get a few Kittiwake Gulls on the winter fishing grounds off Swampscott, Massachusetts, gave me the following interesting account of the habits of this species, and the way in which my specimens were procured.

A number of small schooners sail from Swampscott every winter morning and reach the fishing banks, which are some twelve miles off shore, about day-break. The men then take to their dories, and buckets of bait — generally cod-

¹ Wm. Brewster: Bull. Nuttall Orn. Club, vol. 7, p. 125, 1882.

livers or other refuse — are thrown out to attract the fish to the spot. Of this custom the Kittiwakes — or 'Pinny Owls,' as these men invariably call them — are well aware, and swarms of them quickly collect around the boats to pick up the morsels before they sink. They are very tame, and if one of the flock is shot the others hover over it as Terns will do on similar occasions. The usual way of taking them, however, is with hook and line, the bait being allowed to float off on the surface, when it is quickly seized by one of the greedy horde. In this manner great numbers are annually taken by the fishermen, who either skin and stew them or use the flesh for bait. . . . When the catch has been a large one, and the work of cleaning the fish is continued at the anchorage, they [the Kittiwakes] remain about the spot for hours picking up this offal directly under the sides of the vessels."

Although Kittiwakes are considerably smaller than Herring Gulls, it is easy to be deceived and mistake one for the other unless the two birds are near together. The Kittiwake is generally more graceful and active on the wing, a more rapid flyer, and when one has become accustomed to the two species they are easily distinguished. This I found to be the case when sailing off Rockport in winter, and the fishermen who have taken me out, rarely made a mistake in pointing out "Winter Gulls," as they called the Kittiwakes.

A capital point which I have made out in adult Kittiwakes as they flew overhead is the fact that the bases of the black tips of the primaries are in straight line, instead of extending farther up the feathers in the larger primaries as is the case in Herring Gulls. In the immature Kittiwakes, however, this distinction does not exist, as there is much black in all the large primaries. The differences between this Gull and Bonaparte's Gull will be discussed under the latter bird. The rudimentary hind toe without a nail is not revealed, unfortunately, until the bird is in our hands. The bird referred to above, shot on September 6th, 1903, had a much more noticeable hind toe with a minute nail, and suggested the western form, *Rissa tridactyla pollicaris*. An examination of a series of skins of our eastern bird shows, however, a considerable variation in the size of this toe.

15 [42] *Larus glaucus* Brünn.

GLAUCOUS GULL; BURGOMASTER.

Very rare winter visitor.

At the Peabody Academy, in Salem, there are two specimens of this Gull, one immature labeled Essex County, 1856, S. Jillson, the other taken at Lynn

by N. Vickary, no date being given. In the collection of the Boston Society of Natural History is a male taken at Nahant, December 16th, 1882.

In old age the bird is almost pure white, lacking the blue mantle, and the bird in this plumage was at one time considered a distinct species, *Larus hutchinsii*, or Hutchin's Gull. R. L. Newcomb¹ under this title reports one shot at Lynn on November 30th, 1869.

I have never seen the Burgomaster but have always been on the lookout for it,—a bird about the size of the Great Black-backed Gull with white wings.

16 [43] *Larus leucopterus* Faber.

ICELAND GULL.

Accidental winter visitor.

The only record I have for this bird is a specimen in the Peabody Academy collection taken at Swampscott, by R. O. Wentworth. No date is given.

17 [47] *Larus marinus* Linn.

GREAT BLACK-BACKED GULL; "SADDLE-BACK."

Common winter visitor; (summer); July 17 to May 1 (June and July).

A few birds occasionally pass the summer, there being, for example, two adults and two immature birds at Ipswich Beach during the summer of 1903.

This magnificent fellow has very much the same habits and haunts as the Herring Gull. With his snowy white head and dark back he is very noticeable, and it is not entirely inappropriate to mistake him, as has been done, for a Bald Eagle. During the last of July, they begin to arrive from the north, and in September one may occasionally see as many as one hundred together on the beach. As early as July 17th, 1904, I found seven adults in a flock of Herring Gulls on Ipswich Beach. They associate freely with Herring Gulls, but are even more shy, never in my experience allowing any one to approach within gunshot, excepting in the protected harbors. Although they are sluggish flyers at times, yet when a gale is blowing they are as active and graceful as Swallows. They are apt to be tyrannical. I have seen one chase a Herring Gull,

¹ R. L. Newcomb: Forest and Stream, vol. 10, p. 155, 1878.

twisting and turning like a Hawk, until finally the Herring Gull, hard pressed, dropped a clam, on which the big fellow at once pounced. Their cry is easily distinguished from that of the Herring Gull, being deeper and coarser.

In winter, they are very fond of resting on the Salvages, rocky ledges off the coast of Cape Ann.

I have noted their field marks and distinguishing points from the Herring Gull in the annotations on that bird.

18 [51] *Larus argentatus* Brünn.

HERRING GULL; "GRAY GULL."

Abundant resident; does not breed.

Especially along the northern sandy shores of Essex County, particularly at Ipswich and Coffin's Beaches, the Herring Gull is to be found at all seasons of the year, —always abundant. Their numbers have noticeably increased during the last three or four years, owing to the efforts of the Audubon Society in protecting them on their breeding places on the coast of Maine. During the winter they are seen in great numbers in the harbors and in all protected bays. At this season they are more apt to visit the flats, creeks, and marshes, while in the summer they are chiefly to be found on and near the sand beaches and their outlying bars. During October and November, and again in the spring migration, they often tarry for a while in the large ponds, and I have seen numbers standing on the ice of a pond in December, even when there was no open water near. They also frequent the rocky ledges off the end of Cape Ann. In June, July, and August they are often particularly abundant at the beaches.

As their nearest breeding place is at No-Man's-Land in Penobscot Bay, 111 miles to the northeast of Ipswich Light, and from there on eastward down the Maine coast, some explanation must be given for their presence here. The common explanation is that those that pass the summer are immature and barren birds. This is certainly true, but is, I believe, only a partial explanation, because it hardly seems credible that so many adult birds as are found here in summer should be barren. I have made numerous counts and have sometimes found in June and July in some flocks as many as a quarter of the birds in the adult or nearly adult plumage. At other times during these months a flock will be seen where nearly all are in dark, very immature plumage, while near at hand may be a small flock of apparently full adults. Many of the large flocks contain from five to ten percent of adults. On the 21st of June, 1903, I saw at least

2000 Herring Gulls on the beach at Ipswich. On July 27th, 1903, between 2000 and 3000 of these birds were there. On the latter date, in a strong northwest wind, the birds alighted in a long line stretching from the edge of the sea, where the beach (see page 21) had extended out within a few years, back over the sand, through the small lagoon of water to the dunes. This was a measured line of 320 yards. The birds varied from two or three up to twenty in a yard, the line of Gulls being extended in places to a breadth of several yards. Counting eight in a yard as a moderate average, this would make 2560 birds. Although the majority of the Gulls were in various stages of immature plumage from the dark gray to the mottled and to the nearly white, a considerable number were in full adult plumage, with snowy breasts, pearl gray backs, and bright yellow bills.

Another fact which is not easily explained on the barren-bird theory is the great variation in numbers of the Gulls. Although they are always abundant, yet at times, as when the beaches are covered with dead fish, the number of Gulls increases suddenly. In late May and early June, when nests are being built and eggs laid on the Maine coast, the adults have sometimes been seen copulating on Ipswich Beach.

It seems to me reasonable to suppose that some, perhaps only a few, of these Gulls are daily excursionists from their breeding places to the beaches of Essex County for the food to be found there. At forty miles an hour, the hundred miles distance would be to them not more than a ten or twelve mile walk for us.

Coasting along the shore of Maine, in June, one finds comparatively few Herring Gulls south of Penobscot Bay, except the little groups of half a dozen to thirty or forty in the harbors and coves along the shore. These birds are mostly adults, but immature in all stages are common. Farther out at sea the birds are usually flying southwest in the morning and northeast in the evening.

In a yachting trip from Kittery to Northeast Harbor and back as far as Portland, from June 11th to June 23d, 1904, I took especial note of these points, and was convinced that the Herring Gull was in the habit of taking long excursions for food. Thus on June 13th, I saw a flock of fifty of these Gulls circling around some 300 or 400 yards up in the air off Cape Porpoise, near Portland, Maine, drifting slowly to the westward and frequently calling to each other. Suddenly, about half past eight in the morning, they ceased calling and all made off in a scattered flock towards the southwest, each bird flying rapidly and in a straight line. They were soon lost to sight. In the evenings towards sunset, scattered flocks of Herring Gulls were seen flying northeast along the shore.

Dutcher and Baily¹ in their study of the Gulls at No-Man's-Land and

¹ Wm. Dutcher and W. L. Baily: *Auk*, vol. 20, pp. 417-431, 1903.

Great Duck Island, say: "At daylight large numbers of gulls leave the island and go to sea for food; and the length of time they remain away is governed probably by the distance they have to go to find fish. Some days they return quite early and on others much later. The manner of flight when returning from one of these food trips is entirely different from that of the ordinary excursions made from the breeding grounds; it is made close to the surface of the water, very direct, one bird following another, and is quite rapid. Sometimes the birds show marked evidences of fatigue."

Herring Gulls are very social or gregarious, feeding, sleeping, and resting together in flocks; in fact it seems probable that all the Gulls of Ipswich Bay often gather together in one large flock. The nights, especially during stormy weather, are spent on the upper parts of the beaches beyond the reach of the tides. When they are disturbed from one part of the beach they go to another and it is probable that they often spend the night on the water.

On July 23d, 1904, in a strong northeaster, I noticed the Herring Gulls pouring in from the sand bars where they had been feeding, drifting along side-wise as they flew, trying to keep their heads to the gale, and finally swinging around and dropping head to the wind on the broad plateaux of dry sand back of the beach at Ipswich. In the five minutes between 5.45 and 5.50 P. M., 108 birds came in to the flock that already numbered several hundred, and they continued to fly in, generally at this rate, sometimes more, sometimes less, until 6.25 P. M., when they suddenly ceased to come. The densely packed flock on the sand must have then numbered two or three thousand birds and perhaps more. Disturbed, the multitudes rose, to settle again farther down the beach. On July 27th, a clear moonlight night, I again observed the Herring Gulls gather on Ipswich Beach, but, roused by my presence at 7.30 P. M., they flew towards Coffin's Beach, where they apparently settled for the night. At least I did not hear or see them throughout the night, although I could distinguish Night Herons in the moonlight and could hear the call notes of various shore birds. It is true, however, that I found one Herring Gull on the beach that night, a wing-tipped bird that took to the water on my approach, and swam off. Even in this helpless condition the Gull appeared to prefer the beach to the sea at night. At 4.05 the next morning, the sun rising at 4.34, the Gulls began to appear out of the dim light from the direction of Coffin's Beach, and I counted 448 going north along the beach before 4.15 A. M. At this time I could make out a great multitude of two thousand or more, circling about and alighting on the bars off Coffin's Beach and near the mouth of the Essex River. Again, at 4.30 A. M., I counted a flock of 147 Gulls going by me, while the numbers at Coffin's Beach appeared undiminished. In these huge flocks it is impossible to more than guess at the proportion of full adults, but I noted it at five percent.

The wet sand retains well the record of the Gull's methods of locomotion on the ground. In alighting, both feet come down together or one a little in advance, with considerable force and thrust slightly forward, as is shown by the deep impression at the back of the track. In walking, they occasionally drag the middle toe. In rising from the beach, they rise against the wind, and even in windy weather they run a short way into the wind, but on calm days their launching into the air is labored. The Gull runs forward vigorously with wings spread and as it is gradually borne aloft, the feet still push at the sand until the tips only of the nails make imprints. The distance of the run is inversely proportionate to the velocity of the wind. On uneven ground, as in the sand dunes, the Gulls have merely to launch themselves into the air from a slight elevation, as is also the case when they fly from trees near the shore.

While resting in large flocks on the beach, Herring Gulls are generally quiet, rarely appearing to quarrel. They often sleep squatting with breasts on the sand and bills thrust into the feathers of the back. Much time is devoted to preening themselves, and judging from the feathers remaining, their moulting is more or less continuous, but most marked in April and August. I once saw, on July 3d, 1904, two Gulls facing each other on Ipswich Beach, and bowing with wings extended, suggestive of the nuptial dance. Again, I have seen them chase each other, and run for considerable distances on the beach with wings widely spread.

The flight of the Herring Gull varies greatly. Frequently, in going short distances from one feeding ground to another, they flap along slowly close to the water like Herons or Shags. I have seen individuals in a line of about a hundred turn up as if to avoid an obstacle, and then down again, each in succession flying up at the same point, and following exactly the one in front. Sometimes they advance in broad lines abreast, but as a rule they fly in loose flocks.

When a gale is blowing, the Herring Gull is a different bird. It is then light and graceful in the extreme, now sailing before the wind, now rapidly beating up into it. Oliver Wendell Holmes, watching the Herring Gulls on the Charles River from his window, expressed very well these different moods in *My Aviary*.

"Through my north window, in the wintry weather, —
My airy oriel on the river shore, —
I watch the sea-fowl as they flock together
Where late the boatman flashed his dripping oar.

The gull, high floating like a sloop unladen,
Lets the loose water waft him as it will ;

But when along the waves the shrill north-easter
Shrieks through the laboring coaster's shrouds 'Beware!'
The pale bird, kindling like a Christmas feaster,
When some wild chorus shakes the vinous air,

Flaps from the leaden wave in fierce rejoicing,
Feels heaven's dumb lightning thrill his torpid nerves,
Now on the blast his whistling plumage poising,
Now wheeling, whirling in fantastic curves."

One of the most beautiful sights is a flock of several hundred Herring Gulls wheeling in great circles together, or in numerous intersecting circles, whose courses it is impossible to follow, the sun and shadow alternately making the birds appear white and dark. These flocks circle higher and higher, rising from the beach or the ocean until they reach a considerable elevation. If a strong wind is blowing, they may set their wings and sail off into the teeth of it, occasionally flapping lazily and almost imperceptibly. At other times they all fly off vigorously in one direction. Again, they circle slowly down. In the autumn months it is common to see a flock of several hundred of these great white birds, covering perhaps an acre of brown salt marsh, suddenly rise up, go through these wonderful evolutions, all calling or talking together, and then settle back in the same place. At times they descend almost perpendicularly from a great height as when dropping down into a favorite feeding or resting place, by tipping, or rocking, turning first their backs and then their breasts to the observer.

In alighting on the beach, they frequently fly up nearly vertically to windward, and then drop gently down, landing squarely on both feet. At other times they sail along over the beach and gradually drop onto the sand, keeping their feet well apart. In flying a straight course, the tail is pointed like a cigar, but is spread in soaring, or dropping to pick up food. In quick turns, the feet are dropped pressed together and appear to act like a centerboard or rudder.

Much of their food, especially in harbors, is refuse of all sorts floating on the surface. In picking this up from the water, they check their course, occasionally fly up almost backwards, and then gracefully swoop down with tail spread, pattering their feet on the water, curving down the tail, and seizing the desired tid-bit in the bill. This is often done without wetting a feather, save sometimes the tip of the tail only, but they frequently sit on the water for a minute while swallowing the morsel.

When after small fish or objects below the surface, Herring Gulls throw themselves with some splashing and wings partly spread, head foremost into the water and on rare occasions with such force as to submerge themselves. In these plunges they shoot down obliquely with backs up. Nearly all their

plunges are, however, disappointing, ending in soaring and a gentle descent to the surface of the water.

While sitting on the water, which they ride lightly and with elevated sterns like ancient Spanish caravals, they occasionally may be seen dipping like River Ducks for food. They occasionally devote themselves to bathing, shaking the water through their great wing feathers and splashing it about vigorously. I have seen them while riding the water on a rocky shore, occasionally fly up into the air a few feet to get an impetus, and then plunge into the water so that only the tips of the wings and tail were visible, coming up with molluscs and rock-weed in their bills. One with a choice morsel is frequently chased and made to drop it, and the pursuer at once picks it up. Their cousins, the Great Black-backed Gulls, are also frequently the aggressors.

On the sandflats and beaches they gather a large amount of food, molluscs of all sorts, crustaceans, echinoderms, and especially dead fish. They may often be seen flying nearly straight up or in circles, with a clam or a crab, which they drop from a height onto the hard sand, follow closely the descent, and alight to regale themselves on the exposed contents. If they fail to break the shell the first time, they try again. This habit, which is also a common one with Crows, explains the fact that molluscs' shells, crabs, and sea urchins are scattered so universally along our coast, sometimes half a mile from the sea. I have found skates' eggs still wet with salt water, dropped among the dunes many rods from the sea.

In winter while sitting on ice cakes they pick up the flotsam, and occasionally a living fish from the surrounding water. When the harbors are frozen over, all the cracks in the ice are searched by the Gulls, who associate freely with the Crows in that pursuit. Another interesting association often to be seen at Ipswich is with a herd of harbor seals sunning themselves on the bar. Among these the Gulls walk peacefully.

The Gulls eject the harder particles of their food, and balls of crabs' claws and fish bones entirely cleaned of flesh are scattered about their resting places on the beach. These balls are sometimes two inches in diameter; they are loosely compacted and soon fall to pieces. They often contain bits of feathers or down which the birds must have plucked from their own breasts.

Herring Gulls are at times very noisy, their wild cries going out over the waters. At other times they are silent. When resting, they appear to be scolding or talking together, for with a glass their bills are seen to open and shut in an animated way. I discovered at their breeding places in Maine, where the birds can be observed near at hand, that this opening and shutting of their bills meant a constant scolding or chattering. At times their cries resemble the rattling of heavy blocks; at times they emit a hissing whistle.

Although not as shy as the Great Black-backed Gull, the Herring Gull along our shore rarely forgets himself to the extent of approaching within gunshot, except in the populous harbors where he appears to know that he is safe from persecution. Mr. W. A. Jeffries tells me that at Swampscott Beach where the Gulls are not molested, he has walked within twenty-five feet of a flock of these birds.

The varied plumage of the Herring Gull is always an interesting study, and it is superficially evident from the large number of dark and mottled birds at all seasons, that it takes several years to attain the beautiful adult plumage. What appears to be a dark tip to the tail, so prominent in young birds of a certain age, is often retained after increasing whiteness has set the stamp of years, but it is entirely absent in the snowy white tail of the fully matured bird. Birds with pure white tails with the exception of a slight central sprinkling of dusky brown and with a few faint gray streaks in the upper breast, are not uncommon. These, unless examined carefully with a glass, or in the hand, would easily pass for full adults.

Astley,¹ who has kept Herring Gulls in captivity, says that although they attain a nearly complete adult plumage at the third autumnal moult, the bright yellow bill is not assumed until the fourth year. I have been puzzled by seeing birds with yellow bills whose plumage still showed considerable immaturity. Dwight² states that the bill becomes yellow when the second nuptial plumage is assumed. There must, it seems to me, be great variation in the rate at which the birds attain maturity.

I was interested to note at Great Duck Island, off Mt. Desert, Maine, on June 17th, 1904, that while the great majority of the Herring Gulls that breed there were in full adult plumage, those with dark wings and black tips to the tails were not uncommon, while a few birds were to be seen with a considerable scattering of gray on the breast and upper belly; none darker than this were to be seen. These birds at a distance would appear white except for their dark tails and wings.

The recognition of the Herring Gull in the field is not always simple. Most of our Gulls differ from each other chiefly in size, many, especially when in immature plumage, being otherwise told apart with difficulty. The Great Black-backed Gull in full adult plumage is easily recognized if seen from above, by his black back and wings, the latter with a narrow white border, but it must always be remembered that in certain lights Herring Gulls also look black above. Seen from below as the birds fly over, the differences are slight; but a dark edge can often be seen on the wing of the Great Black-backed Gull. The

¹ H. D. Astley: *My Birds in Freedom and Captivity*, p. 160, 1901.

² Jno. Dwight, Jr.: *Auk*, vol. 18, pp. 49-63, 1901.

immature birds of the latter species although closely resembling in plumage immature Herring Gulls, are more streaked and buffy, less slaty gray. It is impossible to judge of size unless we have something for comparison. On land we are able to judge of the size of a bird by comparison with known objects, like leaves of trees, flowers, fence posts, etc., and the intervening objects make us good judges of distance. On the sea or on a sand beach, in the absence of these objects, distances are deceptive, and we can only judge of size by direct comparison with other birds. Side by side, Herring Gulls appear somewhat smaller than Great Black-backs, but with either alone it is unwise to judge of the size. By their habits on the wing they cannot be distinguished as both may be equally sluggish, or equally light and graceful.

Next in size, smaller than a Herring Gull, is the Ring-billed Gull, which except by direct comparison, appears both in plumage and in flight very much like the Herring Gull. The young birds are, however, never quite as dark. When the birds are side by side the Herring Gull is seen to be considerably the larger of the two, but alone it is very easy to mistake one for the other. The fact that the Ring-billed Gull is generally less shy is a point that has often helped me and the ring-marking on the bill can sometimes be made out. Only slightly smaller than the latter bird is the Kittiwake, often confused with the Herring Gull, but generally more active and graceful, and with a slight difference in the wing-tip markings, while from the smallest of all our common Gulls, the Bonaparte's Gull, there is generally no difficulty in the differentiation. It is to be remembered that the black band at the tip of the tail is common to all the Gulls in certain stages of immature plumage. In the Ring-billed, Kittiwake, and Bonaparte's Gulls this is a true band on the long tail feathers, but the effect is the same in the Herring and the Great Black-backed Gulls, although when the birds are examined carefully with a glass or in the hand, it is seen in them to be due to the fact that the long upper and lower coverts, which are light in color, cover the dark bases of the large tail feathers. The band therefore is broader and less sharply defined.

19 [54] *Larus delawarensis* Ord.

RING-BILLED GULL.

Not uncommon transient visitor ; (winter ?) ; spring ; July 17 to October 30.

I can give no spring dates but Mr. Outram Bangs writes me as follows : "I distinctly remember seeing *Larus delawarensis* several times in the spring ; once in Gloucester Harbor I saw a lot of them. They were tame and I saw them

close to and positively identified them." On January 1st, 1905, a small Gull in brownish gray immature plumage flew over my head at Rockport. It was probably of this species, and it is possible that a few may occur here in winter.

The Ring-billed Gull is found alone or in small flocks. They often associate with Herring Gulls and may be seen on the beaches with these large birds, which they resemble closely in habits. They also resemble them closely in the various stages of plumage as already noted under Herring Gull, and although much smaller, in the absence on the sea or beach of standards for comparison it is often difficult to distinguish them from the larger species. The fact that they may fly along the beach directly by or over an observer, without sheering off out of gunshot as do the Herring Gulls has always given me the hint as to the species, for they appear to have a very confiding nature. The young birds are never so slaty gray as the young Herring Gulls. With a glass, or at close range with the naked eye, the marking forming a ring on the bill of the adult can be made out.

20 [58] *Larus atricilla* Linn.

LAUGHING GULL; BLACK-HEADED GULL.

Rare transient visitor.

Maynard¹ says: "I have seen the bird late in November at Ipswich." There are two specimens in the Peabody Academy, labeled, respectively, Essex County, 1856, S. Jillson, young; and Lynn, male, 1885, Vickary. The Laughing Gull breeds to the south of Cape Cod, at Muskeget, and although it has been almost exterminated on the Maine coast, it is now, under the auspices of the Audubon Society, reestablishing itself at Metinic Green Island. In Mr. Dutcher's² Report of the Committee on Bird Protection for 1903, it is stated that "eight Laughing Gulls were counted at one time, and three nests were found containing eggs" at Metinic Green Island. It ought, therefore, to be seen occasionally on the shores of Essex County as a migrant.

¹ C. J. Maynard: The Naturalist's Guide, p. 151, 1870.

² Wm. Dutcher: Auk, vol. 21, p. 149, 1904.

21 [60] *Larus philadelphia* (Ord).

BONAPARTE'S GULL.

Common transient visitor; (winter?); March 10 to June 3; July 27 to November 3.

Like many sea birds, the Bonaparte's Gull is much more common in the autumn than in the spring migrations. It is possible that a few may occasionally pass the winter here, as on January 1st, 1905, in Lynn Harbor, Mr. F. H. Allen saw among some Herring Gulls a small Gull probably of this species.

In flight and action, the Bonaparte's Gull resembles more closely the Terns than the Gulls, flitting about close to the edge of the waves and frequently dropping down to the water. It delights in feeding in the shallow water on the beaches inside of the surf line, sometimes walking, sometimes swimming, as the waves recede or advance. It is a tame bird and its confiding nature makes it very attractive. Occasionally it emits a harsh, rasping cry, but as a rule it is silent.

The black-headed adults in nuptial plumage are rarely seen on the Essex County coast, for most of the birds in the late summer and autumn are either young or adults in winter plumage. This latter plumage appears to be assumed before the middle of August. The only black-headed birds I have seen in the autumn were two on July 27th, 1903. I have seen birds in the winter or immature plumage as late as June 3d.

The spot on the side of the head can be seen in the immature birds as well as their brownish gray lesser wing coverts and the broad dark tip to the tail. It is to be remembered, however, that the immature of all of our Gulls have this tip to the tail.

The distinction between immature Kittiwakes and immature Bonaparte's Gulls is perhaps the most difficult. Both have a dark spot on the sides of the head, but the markings on the wings when seen from above tell the story. In the Kittiwake there is a white posterior margin and black anterior margin, and this with the black line formed by the lesser coverts and part of the tertials makes a very striking pattern. In the immature Bonaparte's Gull there is a black posterior as well as a black anterior margin to the wing.

The small size of the Bonaparte's Gull, the smallest of our Gulls, its tern-like flight as well as its confiding ways, generally serve to distinguish it.

22 [63] *Gelochelidon nilotica* Hasselq.

GULL-BILLED TERN; MARSH TERN.

Accidental visitor from the south.

There is only one record: a specimen taken by Maynard in September, 1871, at Ipswich, and now in Mr. William Brewster's¹ collection. This is also the only record for the State.

23 [64] *Sterna caspia* Pallas.

CASPIAN TERN.

Not uncommon transient visitor in the autumn: August 8 to September 15.

This, the largest of the Terns on our coast, is probably not as rare as is generally supposed. Mr. Brewster,² writing in 1879, says he considers it "a regular visitor every season and one by no means uncommon. . . . I have observed them at various points from Ipswich to Nantucket." He had seen at Ipswich on September 15th, 1871, a flock of six of these birds and secured one. On August 27th, 1901, at Ipswich Beach, my brother, Mr. W. S. Townsend, also secured one, a young female now in my collection, from a flock of six of these birds. On September 6th of the same year, a flock of five, possibly the same birds, was seen and one secured at the same place by Mr. B. C. Tower.³ This also was a young female. On August 8th, 1902, my brother saw three flying near Ipswich Beach. On August 29th, 1903, as I was on the beach with Mr. Walter Deane, five of these large Terns flew over his head emitting a loud *squeek*. In the autumn of 1904, I saw them several times near Ipswich Beach, as follows: August 21st, one; August 30th, three or four; September 1st, five.

It is interesting to watch these great Terns fishing. Their long, pointed wings and the rapidity of their descent with a splash into the water is suggestive of the Gannet. I have heard them give a loud, coarse, rasping cry, something like that of a barn-yard Goose.

Their tern-build and manner of carrying the bill pointed downwards, together

¹ Wm. Brewster: Amer. Nat., vol. 6, p. 306, 1872.

² Wm. Brewster: Bull. Nuttall Orn. Club, vol. 4, p. 14, 1879.

³ R. H. Howe, Jr.: Auk, vol. 19, p. 91, 1902.

with their large size, more nearly that of the Herring Gull than of the Common Tern, serve to make their recognition easy. Since the capture of the Royal Tern at Ipswich Beach, this bird ought also to be considered. The two in life would appear very much alike, but the Royal Tern has a more deeply forked tail.

24 [65] *Sterna maxima* Bodd.

ROYAL TERN.

Accidental from the south.

Mr. C. Otto Zerrahn shot an adult male of this species at Ipswich Beach on July 17th, 1904. The bird was alone with a flock of Ring-billed Gulls. The specimen is in his collection, and he has kindly allowed me to publish the record here for the first time. In the Birds of Massachusetts by Howe and Allen (p. 27) there are only two records given for the State, one from Nantucket, the other from Chatham.

25 [69] *Sterna forsteri* Nutt.

FORSTER'S TERN.

Very rare transient visitor.

There are but two records for the County and only a few others for the State. One was taken by Mr. C. J. Maynard at Ipswich in September, 1870.¹ There is a specimen in the Peabody Academy collection taken at Nahant in August, 1887, by Mr. R. O. Wentworth.

26 [70] *Sterna hirundo* Linn.

COMMON TERN; WILSON'S TERN; "MACKEREL GULL."

Abundant transient visitor, locally common summer resident; May 13 to October 30.

¹ Wm. Brewster: Amer. Nat., vol. 6, p. 306, 1872.

Eggs: June 14 to July 19.

The average date of arrival of this bird for five years at Milk Island, off the end of Cape Ann, is May 18th. It is rarely seen after the end of September. As a rule, only single birds appear in October, yet on October 16th, 1904, I counted 89 in a flock on Ipswich Beach. A week later, on the 23d, I was again at the beach and saw 30 or 40 of these birds, and again, on October 30th, there were about a dozen. These are in my experience unusually late dates to see so many of these Terns. The weather had been unusually mild.

The Common Tern once bred on all the rocky islands and back of all the sandy beaches on the Essex County coast. The latter breeding places have long since been abandoned. Mr. C. J. Maynard found from fifty to a hundred breeding in the Ipswich dunes between 1868 and 1872, after which latter date it is doubtful if they continued there. The rocky islands were less subject to the invasion of man, and the birds have continued longer to breed there. Nuttall,¹ in 1834, speaks of thirty or forty pairs breeding annually at Egg Rock, off Nahant. They formerly bred on Great Egg Rock, off the Manchester shore. This island is a mass of rock rising in places twenty or thirty feet above the water, and is of about an acre in extent. Here and there are a few patches of pebbles or of coarse grass, but it is for the most part bare rock. On July 19th, 1876, I found a hundred or more Common, with perhaps some Arctic Terns breeding here. The eggs were laid in slight indentations in the rock or in slight hollows among the pebbles, with usually a few straws for form's sake beneath the eggs. In one case the nest was more elaborate, being made of small pieces of driftwood and straws and placed in a hollow among the pebbles. Eggs even at this late July date were abundant, either two or three in about equal proportions, one in one case, four in another. Two years later, on again visiting the rock, only two or three pairs were found and they have since abandoned the place. Up to 1889, Mr. C. E. Brown found them breeding at Cherry Island.

The Common Tern still breeds at Milk Island, off the end of Cape Ann, to the number of about fifty pairs of late years. Milk Island is an irregular triangle of eight or ten acres in extent, flanked by ledges and a sea-wall of pebbles, boulders, and broken rocks thrown up by the storms. This encloses a marshy area in which grow bulrushes, elder, and bayberry bushes. At the southern angle there is a broad surface of broken rock and boulders above the reach of ordinary tides, and here it is that the Terns breed.

Notwithstanding the close proximity of their breeding station, Common

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 2, p. 273, 1834.

Terns very rarely visit Ipswich Beach before the first of August, and they are rare in the spring. The first autumn arrivals in 1903 appeared on August 4th, and in 1904 on August 6th. On August 10th, immature birds were also found. These are all probably migrants from the north. By the middle of the month they are common and flocks of young and old to the number of two or three hundred disport themselves about the beach, or fly screaming over the marshes. Their rattling scream is loud and insistent, and once heard is not easily forgotten, especially by one who has visited their breeding places. On the beach itself, their white breasts suggest at a distance a flock of shore birds, but their short legs and long wings make them awkward walkers. Unlike Sandpipers, therefore, they generally stand still or walk but a few inches. They often bathe in the shallow water, or, standing still, snatch a few moments of sleep, with their heads sunk down between the shoulders, or the bill buried in the feathers of the back. As they rise, their rattling *te-arr* and loud *ki' ki' ki'* ring out, and they scatter to hover and plunge into the water, often immersing themselves entirely in their pursuit of small fish. Not infrequently they may be seen flying with a fish hanging from the bill.

They often dart down screaming at gunners' decoys, and when one of their number is shot they circle about and dart down screaming at the hapless one, whether to help or destroy, I know not.

They suffer greatly from the annoyance of the Jaegers, who pursue them unmercifully and force them to drop their prey. But they frequently chase the Jaegers in return, screaming continuously. Once in mid-August on the Maine coast I found a Common Tern chasing a male Sharp-shinned Hawk. The latter twisted and turned but was unable to escape his adversary until he took refuge in an alder thicket, around which the Tern flew screaming in anger. The cause of this anger I could not discover, because the Hawk's stomach contained only a Sparrow and a Warbler, birds in which the Tern presumably took no interest.

It is certainly a great satisfaction to bird-lovers to note a decided increase in the number of Terns of late years, owing to the splendid efforts for their protection.

The Common Tern is easily identified by his swallow-like flight, his bill pointing downwards as he flies, by his hovering and plunging after fish and his loud *te-arrs*. The points of difference between the Common and the Arctic Tern are given under the latter bird.

27 [71] *Sterna paradisæa* Brünn.

ARCTIC TERN.

Uncommon transient visitor, formerly summer resident; spring; August 10 to September.

Mr C. J. Maynard tells me that he found this bird between 1868 and 1872 breeding in the dunes at Ipswich, back of the beach. In his Naturalist's Guide (p. 145) he gives measurements of five adults, two young of the year, and one fledgling shot at Ipswich in July, 1868 and 1869. He with Allen¹ found the young at Ipswich just able to leave the nest. Arctic Terns were found breeding on the islands in Beverly Harbor in 1846.² It is probable that in the Common Tern colony on Egg Rock off Manchester, previously described, there were a few Arctic Terns, for the two species frequently breed together to-day on the Maine coast.

The habits of the Arctic Tern are similar to those of the Common Tern. When the two species are calling together it is difficult to distinguish the characteristic cries of the Arctic Tern. On favorable occasions, however, one may hear its jerky, squealing call. The call ends with a *te-arr* similar to that of the Common Tern.

Adult Arctic Terns can be distinguished from Common Terns by the fact that their bills are of a uniform deep red, devoid of the black tips possessed by the Common Terns. The tail is slightly longer and the under parts grayer. These differences can be made out only at close range or within fifty to a hundred yards. I have, however, distinguished the two species with a telescope in a good light at the distance of several hundred yards.

28 [72] *Sterna dougalli* Montag.

ROSEATE TERN.

Rare transient visitor; formerly summer resident.

Samuel Cabot³ reported the Roseate Tern as breeding on the islands in

¹ J. A. Allen: Amer. Nat., vol. 3, p. 643, 1870.

² Samuel Cabot: Proc. Boston Soc. Nat. Hist., vol. 2, p. 179, 1846.

³ Samuel Cabot: Proc. Boston Soc. Nat. Hist., vol. 2, p. 179, 1846.

Beverly Harbor, in 1846. Baird, Brewer, and Ridgway¹ reported it breeding at Egg Rock, Nahant, in 1840. Mr. Maynard tells me he never found it breeding but he states in his *Naturalist's Guide* (p. 157) that it is "common at Ipswich in autumn." I have never seen it.

29 [74] *Sterna antillarum* (Less.).

LEAST TERN.

Accidental visitor; formerly summer resident.

The only certain record I have for the Least Tern is Maynard's statement in the *Naturalist's Guide* (p. 157) that he "found a few breeding at Ipswich." This was in the late sixties. I once saw at Ipswich Beach, in the autumn, a small flock of Terns which I believed to be of this species. As the bird does not now breed regularly north of Cape Cod, its occurrence on the Essex County coast must be purely accidental.

30 [75] *Sterna fuliginosa* Gmel.

SOOTY TERN.

Accidental visitor from the south.

An adult male was taken on the Merrimac River, near Lawrence, on October 29th, 1876,² and five or six other specimens were taken in New England that same year. Allen³ calls this "a remarkable invasion of these birds into New England in the fall" of 1876.

31 [77] *Hydrochelidon nigra surinamensis* (Gmel.).

BLACK TERN.

Not uncommon transient visitor; June 7; August 10 to September 6.

This little Tern is a regular and not uncommon visitor, especially during

¹ S. F. Baird, T. M. Brewer, and R. Ridgway: *Water Birds*, vol. 2, p. 305, 1884.

² Ruthven Deane: *Bull. Nuttall Orn. Club*, vol. 2, p. 27, 1877.

³ J. A. Allen: *Bull. Amer. Mus. Nat. Hist.*, vol. 1, p. 228, 1886.

the last week of August. The only spring record I have is that of a pair of full adults in black plumage in the collection of the Peabody Academy, taken at Nahant, on June 7th, 1883.

The habits of the Black Terns are very similar to those of the Common Tern, but from their smaller size they appear more active. They are found singly or in flocks of five or six, and at times they associate with the Common Tern. I have never heard them utter a sound.

In the autumn all the birds appear to be in winter or immature plumage, with white breasts and bellies and dark backs. They have a dark partial ring on the upper breast and a black patch around and behind the eye and on the crown. Their small size makes their recognition easy, and their tameness often permits close scrutiny.

[86] *Fulmarus glacialis* (Linn.). FULMAR; "NODDY"; "MARBLEHEADER"; "OIL-BIRD." It is possible that the Fulmar may in storms be driven within sight of the Essex County coast, but I have no records for this region. It is strictly pelagic in its habits. Capt. Collins¹ says that the Fulmar "is fairly plentiful in winter from George's to the Grand Bank,"—a region several hundred miles to the east of Essex County.

32 [89] *Puffinus gravis* (O'Reilly).

GREATER SHEARWATER; "HAGDON"; "HAGLET"; "HAG"; "GRAY HAG."

Common summer visitor off the coast; May to October 12.

Our Shearwaters breed in the southern hemisphere and spend the non-breeding season, their winter, in our summer. They are birds of the ocean in the strictest sense, rarely, while with us, coming near land, although in stormy weather this occasionally happens. Mr. Charles Larkum, of Beverly, tells me that during a northeast storm in October he saw a number of these birds about half a mile off the mouth of the Essex River.

I have sailed a good deal along the coast in small boats, generally within three or four miles of shore, always on the watch for interesting birds, but never until I made a special trip for them, did I find the Shearwaters. As Cape Ann projects out so far, it is evident that we can gain something on Old Ocean by starting from there, and I had been told by a fisherman, who knew the "Hags" well from old experience on the "Banks," that I could see them there some ten or a dozen miles off Rockport. On the day in question, there had been a heavy

¹ J. W. Collins: Auk, vol. 1, p. 238, 1884.

southerly blow with rain, and the birds were found nearer shore than usual, about four miles out. While the Wilson's Petrels, attracted by the cod livers we were throwing out to them, surrounded our boat in numbers, suddenly there appeared a Greater Shearwater, immediately recognized and distinguished from the Gulls by its characteristic appearance and flight. In all, we saw six or eight Greater Shearwaters and two or three Sooty Shearwaters.

The Shearwaters have a very characteristic manner of gliding or scaling swiftly near the water with their long pointed wings slightly decurved. As they fly and scale about the boat, all their motions are graceful in the extreme. Now they glide straight away, close to the surface of the waves, appearing and disappearing, as the great surges rise and fall; again, they swing in graceful circles around the fishing boat, all alert for the food to be found in that vicinity. Alighting on the water, they rush forward eagerly to seize the bits of cod livers, holding their head and breast well up, the wings partly spread. This position in the Greater Shearwater, displays the dark bars and markings on the inner sides of the wings and on the flanks. In seizing the food, their heads and necks are eagerly stretched out along the water. Besides cod livers, they are evidently very fond of squids, for one that I shot contained in its stomach the horny beaks of twenty-four squids.

Mr. George Dobson, of Rockport, with whom I have sailed several times to find water birds, had thirty-five years ago caught many of the "Hags" on the Grand Banks for bait. He told me that each dory was required to catch two hundred with hook and line each morning. This was done very quickly as the boats were surrounded by the birds eager for the cod livers. The "Hags" were then skinned, pounded with a mallet to break the bones, and cut up with a sharp knife into small pieces to bait the trawls. In this account he agreed with the description given by Capt. J. W. Collins.¹ Since that time Mr. Dobson said that the practice of using "Hags" has been given up in favor of "fresh bait,"—herring, capelin, and squid kept on ice. The "Hags" when skinned and freed from fat, he said, were much appreciated as food by the fishermen, and I can attest that when treated in this way and properly cooked they are tender and to one who is used to sea fowl, really very good eating.

The manner of flight already described distinguishes Shearwaters from Gulls. The dark back and top of the head contrasting with the white breast and throat is noticeable in the Greater Shearwater; the wings also are dark, the lower surface, however, being silvery gray.

[90] *Puffinus puffinus* (Brünn.). MANX SHEARWATER. "A North Atlantic species, chiefly

¹ J. W. Collins: U. S. Comm. Fish and Fisheries, Report for 1882, pp. 311-338, 1884.

on the eastern side; accidental in Greenland, and rare or casual off the North American coast (?)."¹ Included by Putnam,² in 1856, from a skull in the Essex Institute collection taken from a bird said to have been killed in Salem Harbor, August 13th, 1855. "As Prof. Putnam cannot at this time remember anything in regard to the record, and as the skull is not to be found, the species is not here enumerated."³

33 [94] *Puffinus fuliginosus* Strick.

SOOTY SHEARWATER; "BLACK HAG" OR "HAGDON."

Not uncommon summer visitor; March to October.

There is a specimen in the collection of the Boston Society of Natural History, labeled Egg Rock, off Nahant, March, 1879.

The Sooty is much less abundant than the Greater Shearwater. The habits and methods of flying appear to be the same in these two Shearwaters. A specimen I shot off Rockport, in August, contained in its stomach the beaks of several squids.

The dark color at once distinguishes the Sooty Shearwater. It appears almost as black as a Crow as it scales along with its narrow, pointed wings and its short, rounded tail.

[97] *Prionus cinereus* (Gmel.). BLACK-TAILED SHEARWATER. Recorded by Putnam⁴ as "Winter. Common." The bird is a Pacific Coast species and is not known to occur here.

34 [106] *Oceanodroma leucorhoa* (Vieill.).

LEACH'S PETREL.

Uncommon transient visitor; June 21; October 12 to November.

Although Leach's Petrels breed in large numbers along the coast of Maine as far south as No-Man's-Land in Penobscot Bay, 111 miles northeast of Ipswich Light, they very rarely stray during the breeding season to the Essex County coast, and are only occasionally seen during the migrations. Yet it is evident that many thousands must pass our shores. The birds that are seen

¹ Amer. Ornith. Union Check-List, p. 32, 1895.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 225, 1856.

³ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 22, 1901.

⁴ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 222, 1856.

are generally those that have been driven by storms or have wandered inland. Mr. C. H. Houghton, of Rowley, has a specimen that was caught in the creek near the railroad station at Rowley, in the autumn. Mr. Ralph Hoffmann gave me a dead bird of this species that he found at Nahant on November 5th, 1903. Dr. John C. Phillips shot one at Wenham Lake on October 15th, 1904, and Mr. C. E. Brown obtained one there on the same date. He also took one at Ipswich Beach on October 12th, 1904. These last two are now in the collection of the Boston Society of Natural History.

The only record I have of Leach's Petrel during the summer is an interesting one. On June 21st, 1903, during a prolonged northeast storm, I was watching a flock of from forty to fifty Wilson's Petrels near Ipswich Beach, when my attention was attracted by five birds which belonged to the species under discussion. These Leach's Petrels were distinctly larger and browner, — a shabby brown, — while the Wilson's appeared nearly black. On close scrutiny the diagnostic difference in the tail which was slightly forked in the Leach's Petrel, was noticeable, but the larger size and browner color first struck my eye. In both, the white rumps contrasting with the dark bodies are conspicuous. At this season and a little earlier, I have found the males sitting on the single eggs in their burrows at Great Duck Island, off Mount Desert, Maine. I regret that I did not have my gun at the beach on this occasion, for it would have been interesting to find out whether these were the day-wandering females.

35 [109] *Oceanites oceanicus* (Kuhl).

WILSON'S PETREL; "MOTHER CARY'S CHICKEN"; "STORMY PETREL."

Abundant summer visitor off the coast; June 21 to September 23.

This bird is a summer visitor, not a summer resident, for it makes its residence and lays its egg in February on the islands of the South Atlantic in its summer, coming north across the equator in our summer. Its life is therefore one perpetual summer although spent on the stormy ocean. On July 8th, 1891, a Petrel, probably of this species was killed by striking one of Thatcher's Island Lights. I have never known them, like the Leach's Petrel, to be found in inland ponds and rivers.

The Wilson's Petrel is in my experience the only Petrel that is seen here throughout the summer. It almost never comes close to the shore except in stormy or foggy weather. Fishing for cod a few miles off the shore, one is almost certain to have these birds come about the boat for the bait and

"gurry" that are inseparable from this pursuit. They are very tame, pattering over the waves and picking up morsels of food close to the boat. They are sometimes caught with hook and line and I have a bird in my collection that may have been caught in this way. It was picked up dead on Ipswich Beach, was well nourished but had a slit at one corner of the mouth as if a hook had been cut out. Another in my collection was found floating at Magnolia near the shore with no signs of violence. When winged and caught, they vomit quantities of ill-smelling fish oil, and their stomachs, — large flabby pouches, — always contain it. Besides the oil I have found a few small stones and bits of charcoal. The odor of the Petrel, even of old specimens in collections, is distinctive.

It is rare that one finds them so close to the land as actually to fly over it, but this happened in my observation once during a severe easterly rain-storm at Ipswich, on June 21st, 1903. The surf was breaking on the shallow beach as far out as one could see through the blinding rain and spray, but these birds with wings set, would glide into the teeth of the wind and bound from wave to wave as if on springs, seeming every now and then to be overwhelmed in the surf, but appearing beyond the wall of foam steadily gliding and bounding to windward. A slight movement only of their wings was at times to be noticed, and an occasional pattering of their feet on the waves. Ever and anon they would wheel about like large swallows, flying to leeward, to turn again and glide and bound into the wind. Once or twice they flew for a moment over the beach itself, actually drifting past me on the shore side, as I stood in the water at the edge of the surf.

In calm weather they occasionally settle down on the water the better to pick up food. As they surround a fishing boat, especially if bits of fish-liver are thrown out to them, they can be observed closely. They hop at times on the water with the use of the wings, keeping the feet together and pattering lightly on the surface. At other times they appear to run along on the waves, using the feet alternately, but supporting themselves by their wings. When the Petrels are feeding excitedly on the bits of liver they emit a gentle peeping note. I have seen them startled from the water at night, wheel around the vessel wildly, high up, and disappear in the darkness astern.

In flight, the feet can be seen to project *beyond* the tail, and this is a capital diagnostic point, for the feet of the Leach's Petrel do not reach to the end of the tail, or even to the apex of the fork. After noticing this in the living bird I found it was a marked distinction in the skins. The average length of the tarsi of two Leach's Petrels in my collection is 0.84 of an inch, of the tibiae 0.95, a total length of 1.79 inches. The average length of the tarsi of four specimens of Wilson's Petrels is 1.28, and of the tibiae 1.44 inches, a total

average length of 2.72 inches. This makes a difference of nearly an inch in the length of the whole leg. The white rump is of course noticeable and the light gray of the secondary wing coverts, contrasting with the sooty black of the rest of the wings, is also apparent.

[115] *Sula sula* (Linn.). BOOBY. A tropical and subtropical bird, recorded by Putnam¹ for Essex County as "rare." This record has been "expunged."²

36 [117] *Sula bassana* (Linn.).

GANNET.

Common transient visitor; March 26 to June 7; August 28 to December 21.

At times the Gannet is a common bird off the shore, especially in the fall migration, and is seen singly and in small or large flocks. Its stay with us in the autumn is coincident with that of the herring, which at this season swarm in the waters of Ipswich Bay. I have seen a hundred and on one occasion at least two hundred Gannets about a mile off the beach at Ipswich, and most interesting it is to watch them fishing. This, in their case, is far from being a quiet pursuit or a contemplative man's recreation; much more does it suggest a naval battle, for the birds hurl themselves at the water like bombs, sending the spray up to a great height. In fact, the comparison might also be made with a school of whales, as the spurts of spray resemble the spouting of these animals. The Gannets follow the schools of herring and actually bombard the water in rapid succession, or even several at the same time. The process in detail is as follows: the Gannet flies rapidly over the water and begins to soar at a height of from 30 to 100 feet, often rising just before the plunge. At the plunge the head is pointed down, the tail up; the wings are partly spread so that the bird appears like a great winged arrow. The speed of the descent is great, and the wings are closed just before reaching the water, which spurts up to a height of from five to fifteen feet. After the waters have subsided following the splash, and all is still, the bird suddenly and buoyantly comes to the surface, the head and neck stretched out first. It then sits quietly on the water for a half minute or so to finish swallowing the prey and to rest, and then slowly and laboriously rises to windward, with its long neck and tail stretched to their full extent.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 221, 1856.

² R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 59, 1901.

Gaining a height of thirty or more feet, it swings around to leeward, and is soon soaring and plunging again.

Of eight observations made with a stop-watch on the length of time that this bird remained under water after the plunge, the limits were 4 and 7 seconds, the average being $6\frac{1}{4}$ seconds. I also timed them in three descents from a height of perhaps sixty feet and found it to be $1\frac{1}{4}$, $1\frac{1}{2}$, and 1 second, respectively, from the beginning of the descent to the time when they struck the water. This would indicate that the bird actually throws itself downward, and not merely drops by gravitation as the distance traveled is too great for such a quick descent by gravity alone. This is apparent without actual measurement, and is also shown by the fact that the birds sometimes descend quickly at an angle, two often aiming at the same spot. How they avoid annihilating each other seems marvellous. The height of the descent is of course very difficult to judge, but my estimates are based on comparisons with the masts of schooners equally distant. The height of the splash was compared with that of spar buoys near the fishing grounds. As with all other sea birds at a distance, observations were made with a telescope.

I once had an opportunity to watch this bird on the beach, a single bird near a flock of Herring Gulls. It was evidently taking its ease, lying out on the sand, with one outstretched wing. Later it walked about. When first seen with neck outstretched I mistook it for a Goose, but soon saw it was a Solan Goose or Gannet. It is interesting, as Newton shows in his Dictionary of Birds, that Solan has the same derivation as *Sula*, and Gannet comes from *Gans*—a Goose. The extension and retraction of the neck of the Gannet is seen when it is flying as well as when on the ground.

There is a mounted adult Gannet in the rooms of the Union Boat Club, at Boston, that was caught at Marblehead in the "early summer" about twenty years ago by Mr. Wm. S. Eaton. The bird was sailed up to on the water, struck on the head with a boat hook, and easily captured.

The Gannet somewhat resembles a large Gull. It is, however, considerably larger than a Herring Gull while its wing feathers, black as if dipped in ink, and its long pointed tail and bill easily distinguish it. Its back is snowy white, instead of blue-gray as in the Gull. The bare yellow skin extending from the base of the bill towards the eye can sometimes be made out with a glass. In the autumn, some of the birds are in gray and brown immature plumage, yet their general shape distinguishes them. The most characteristic thing about Gannets, however, is their manner of fishing.

37 [119] **Phalacrocorax carbo** (Linn.).

CORMORANT; COMMON CORMORANT.

Uncommon transient and winter visitor ; November 13 to January (and to April).

There are two specimens in the Peabody Academy at Salem labeled respectively, January, 1867, Gloucester, and December, 1888, Lynn. I saw two immature birds of this species on the tripod of the Great Salvages off Rockport, on January 1st, 1905, and one there on November 13th, 1904.

Their flight and habits are similar to those of the Double-crested Cormorant, soon to be described. One of the birds I saw on January 1st, sat for a short while on the rock in the spread-eagle posture. It was a mild day for winter, but the posture must have been a chilling one.

As Cormorants are rarely seen near at hand, being shy birds, it is difficult to distinguish this species from the Double-crested Cormorant. Mr. Brewster says : "In flight and general appearance this Cormorant resembles [*dilophus*], but it looks much larger, and its white throat is usually a conspicuous feature."¹ This marking, however, is seen in the adult only. The difference in size is striking both when the birds are on the wing and when perched. I have been able to note this when, in company with Mr. Hoffmann, I was so fortunate as to observe an immature bird of each species sitting side by side on the beacon on the Great Salvages off Rockport, November 13th, 1904. They flew off together as we sailed by, but returned to their perch so that a second look was possible, this time within a hundred yards. Another noticeable difference, besides the larger size of *carbo*, is that the belly of this species in the immature is nearly white, while that of *dilophus* in the immature is grayish or brownish white on the upper breast and shades down to black on the lower belly. The bare skin of the throat, the gular sac, in *carbo*, at least in the immature, is more of a brownish yellow, that of *dilophus*, even in the immature, an orange yellow. Seen from the side, the extent of this bare skin appears the same in both species, but from below, the feathers are found to go up in a point nearly to the bill in *carbo*, while in *dilophus*, the posterior border of the bare skin is straight across without any projecting angle of feathers. This difference enables one to distinguish the two species in the hand with great ease, and I was able to make out the colors in life. Another distinction, to be made out with the bird

¹ Wm. Brewster : Proc. Boston Soc. Nat. Hist., vol. 22, p. 394, 1884.

in the hand only, is the fact that *carbo* has fourteen tail feathers and *dilophus* twelve. The tail is generally well worn by abrasion on the rocks. In the hand, one is also impressed by the uncanny shape of the jet black feet suggestive of a bat's wing, and the fur-like feathers of the neck. The birds seen in January, 1905, were first noticed from the shore a mile and three quarters distant. Even at this distance I was able with a telescope to make out the white belly and thus distinguish the species. Later, we sailed within a hundred and fifty yards of them and could observe them closely.

38 [120] *Phalacrocorax dilophus* (Swains.).

DOUBLE-CRESTED CORMORANT; "SHAG."

Common transient visitor; April 4 to June 18, (to July 7); August 22 to November 24.

Like many sea birds, this species is more commonly seen in the autumn flight, when it occurs all along the coast, but particularly off rocky shores. Mr. R. S. Eustis tells me that he observed two Cormorants from June 20th to July 7th, 1904, off Marblehead. They were not seen after the latter date. Dr. J. C. Phillips reports that they are not infrequently seen flying high over Wenham Lake, especially in easterly storms in October, and on one occasion, in 1900, a single bird alighted in the lake.

The *Corvus marinus*, or Cormorant, is, as its name implies, a great black bird, which when once known is easily recognized. Singly and in flocks of from five to thirty or more it is to be found flying along the coast most abundantly in October. It alights on the water and on rocks and rocky islands, and is particularly fond of spar buoys. The huge tripod on the Great Salvages off Rockport is one of their favorite perching places. Its attitude on a perch is most characteristic. The bird sits upright resting on its tail, with an S-curve in its neck. It often sits in spread-eagle style with wings stretched, the head sometimes turned to one side and upwards, looking like the typical Eagle on the old-fashioned mirrors. I have seen them keep this position for ten minutes by the watch.

I once saw three Shags on the beach at Ipswich. Only occasionally did they rest their tails on the sand, generally keeping them raised an inch or two. They frequently stood on one leg, and they walked with an exaggerated waddle. I was interested to examine their footprints on their departure. The three front-toe marks with nails were plainly shown, and a deep depression marked the

base of the foot. The fourth toenail had also deeply cut into the sand, at right angles with the long axis of the foot, and there was in some of the marks an indication of the web connecting all the toes. The scratches of the tail feathers appeared in places. In rising, the birds took five *hops* for a distance of four yards before they could clear the sand. By *hops* I mean that their feet were placed close together, as shown by the six deep scratches of the nails. Gulls and Ducks use the feet alternately, run, in other words, when they are launching themselves into the air, but in the case of the Shags the footprints were side by side and as close together as possible.

On the water, Shags look very much like Loons, except for their black necks and breasts. They dive with great facility, throwing themselves forward with their powerful legs. They rise from the water with considerable difficulty, unless a strong breeze is blowing. In flight, they are totally unlike a Loon for their large rounded wings are slowly flapped like a Heron's, and at times they glide on outstretched pinions. The neck is stretched out in front, generally with a slight curve near the head, and the tail appears short in comparison with the long neck. It is in reality quite long, and is fan-shaped when spread. The short legs do not stretch out beyond the tail in flight as they do in case of the Loons, but are concealed by the tail. They fly in single file, in a perfect V, or in an irregular bunch. When flying from one feeding or resting ground to another, they flap along close to the water, but in migrating they generally fly high. A large dark bird flying heavily close to the water and alighting on a spar buoy, can surely be put down as a Cormorant. I have frequently watched these great birds alight on a spar buoy or spindle. They first swing around to leeward of it, then flap and sail towards their goal with neck stretched out to its fullest capacity and pointing nearly straight up at the last, when the feet are dropped ready to grasp the perch. Sometimes they fail to make it the first time, and are obliged to swing around to leeward and try again. The only sound I have heard these birds utter is a hoarse croak.

The marks for the recognition of this bird in the field are given in detail above, but are in brief as follows: on the water it looks like a Loon but has a dark breast and neck as well as back. In flight, its broad wings are flapped and set like a Heron's, but its neck and long tail are distinctive. Perched on rocks or buoys, its upright figure, long, slightly curved neck, and tail used as a prop make it unmistakable. The distinctive points between the Double-crested and the Common Cormorant are detailed under the latter bird.

39 [125] *Pelecanus erythrorhynchos* Gmel.

AMERICAN WHITE PELICAN.

Accidental visitor from the south.

There is a fine specimen in the Peabody Academy collection taken by a fisherman, at Gloucester, in 1886. The only record given by Howe and Allen¹ for the State is of a bird taken at North Scituate on October 5th, 1876, by Mr. George Pratt.

[126] *Pelecanus occidentalis* (Linn.). BROWN PELICAN. I have decided to drop this bird from the list and put it among the doubtful species as the only record is that "Mr. J. F. Le Baron is confident of having seen two of this species at Ipswich some years ago."² It is a southern bird and according to Howe and Allen³ the only other record for the State is of one killed about 1867 from a flock of thirteen, at Nantucket.

40 [129] *Merganser americanus* (Cass.).

AMERICAN MERGANSER; GOOSANDER; "POND SHELLDRAKE."

Not uncommon transient visitor; a few winter; October 15 to April 24.

The American Merganser is essentially a fresh-water bird, frequenting the ponds and rivers, and the pools in the fresh marshes, although it is occasionally seen in the salt creeks, at the mouths of the rivers, and in harbors. In this respect it differs from its cousin the Red-breasted Merganser, which prefers salt water and is less common than the Goosander in the ponds. Mr. William Brewster tells me that for the last twenty years he has seen the Goosander in small scattered flocks in the open rough water of the Merrimac River between Lawrence and Haverhill during the winter months. I saw one in Lynn Harbor on February 14th, 1904, and one or two are not infrequently seen and shot in Plum Island River during the winter. My latest date, April 24th, in 1904, records a pair I saw flying up the Ipswich River close to its mouth.

In habits, the American Merganser closely resembles the Red-breasted Merganser, from which it can be distinguished in adult male plumage by the

¹ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 60, 1901.

² C. J. Maynard: The Naturalist's Guide, p. 149, 1870.

³ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 60, 1901.

broad white breast, without a reddish ring or collar. The male *americanus* unlike the male *serrator* has no crest. The former is distinctly larger than the Red-breasted one, looking especially long when flying, but the most striking point about the American is the great expanse of white bosom, seen when he flies overhead or stands up in the water to flap his wings. At close range and in some lights at a distance the faint salmon tint of the breast can be seen. The female and young can often be distinguished, even at a considerable distance, from the female and young Red-breasted Mergansers; which they otherwise closely resemble, by their white throats contrasting sharply with the darker brown head and lower throat. In the Red-breasted species the whole throat is whitish to a pale rufous shading gradually into the darker color of the lower throat. From the American Golden-eye, even at a distance, the adult male American Merganser is distinguished by his low forehead and long red bill, and by the absence of a white spot on the side of the head. The chunkier build of the Golden-eye with his large head and shorter neck always make the differentiation an easy one.

41 [130] **Merganser serrator** (Linn.).

RED-BREASTED MERGANSER; "SHELLDRAKE."

Abundant transient and winter visitor; a few spend the summer; September 23 to May 20 (summer).

When a bird spends the summer as commonly as does the Red-breasted Merganser, it is rather difficult to set the limit to the migrations. It is evident, however, that of the 42 birds of this species I counted off Ipswich Beach on May 20th, 1904, most of them were bound north, for during that summer only two were to be seen in that locality. Some of the summer-spending Mergansers are cripples from the winter's shooting; others that appear uninjured may be set down as barren birds. In the summer of 1903, an adult male and a female or immature male were frequently to be seen in company, and they were both good swimmers, divers, and flyers.

By the end of the first week in October, the Red-breasted Mergansers begin to be common off the beach at Ipswich in small and large flocks that are made up almost entirely of females and immature birds of both sexes. The males arrive later in November, and by the last of December and throughout the winter the flocks consist almost entirely of adult males. Only a few in immature or female plumage are to be found. Thus on January 24th, 1904, out of about 500 Red-breasted Mergansers, off Ipswich Beach, I could find only six

that were not in full adult male plumage. Mr. Brewster tells me that in Florida in the winter he has seen great flocks of young and females, so it is not only in the human species that the male braves the hardships of the North while the wife and children enjoy themselves in the sunny South.

The females and young return towards spring, and by the end of March, perhaps earlier, the love-season begins, and there is much coquetry on the cold ocean. Although this species prefers the salt water, it visits the rivers and ponds during the migrations, but less commonly than the Goosander. Dr. J. C. Phillips has shot it at Wenham Lake from October 18th to December 16th. It is very fond of the salt-water creeks and basins in the salt marshes, but with the introduction and great increase of naphtha launches — “sea-skunks” as they are appropriately called — during the last three years, the Shelldrake have been driven outside more and more. The herring fisheries which are now carried on by these naphtha boats in the fall in the waters of the Essex, Ipswich, and Plum Island Rivers, are especially effective in this result. The birds collect outside in huge flocks, and I have several times estimated these to contain at least 500 individuals. On December 6th, 1903, Dr. Phillips found a flock bedded off the southern end of Plum Island to the number of two or three thousand.

One may spend many delightful hours watching a flock of these birds sporting off the beach in the waves. If they get within the line of breakers they dive before the advancing foam, appearing again on the other side. In diving, they often leap clear of the water, making a graceful curve, with their wings cleaving close to their sides. At other times this leap is much curtailed, or they sink beneath the surface without apparent effort, and when pursued I have seen them put their bill only above the surface for air, to sink again out of sight. In all these arts they resemble the Grebes. Young birds, sometimes at least, do not dive. On the coast of Maine I have chased with a boat nearly full-grown young Red-breasted Mergansers into a cove, and they have not attempted to escape by diving. At other times I have seen the same birds diving.

Red-breasted Mergansers often swim along rapidly with head and neck stretched to the full capacity half in the water in front of them, skimming and apparently straining the water for food. They often put all of the head but the top of the crest into the water, as if looking for fish, and at these times they are constantly diving.

Rising from the water is always a laborious process, especially in calm weather. They flap along for some distance before they can clear the surface, and the noise made by a flock near at hand is very startling if unexpected. I have already spoken (see page 23) of a pair roused from the beach on a calm

day that left marks of their attempts to clear the sand for twenty-nine yards. In alighting in the water they splash for some distance before the impetus is lost. When resting on the beach, their breasts are flat on the sand and they walk like any Duck, but in sitting up, their position at times is semi-upright like that of an Auk.

During the courting season they often forget for hours together to dive for food and their movements are interesting as they chase each other with wings slightly spread, making the water boil; at other times their wings are close to the sides, and the advance is made entirely by the feet. When the female is hard pressed she dives and is at once followed by her lover; what gallantries go on under water, no one can tell. The males often chase each other with much display of white in wings and foam, and gallantly raised green crests. They often stand up in the water and flap their wings, and at times stretch up their heads, opening and shutting the long red bills. They also turn over on their backs to preen their breasts.

Their flight is swift, noiseless, and direct, with long bills and necks stretched out in front and the white secondaries very prominent, and, as they pass overhead, the red ring on the male's breast is seen. This and the crest remind one of the Belted Kingfisher. They generally fly rather high. When flying in pairs, the female often precedes, but this is not always the case.

When the birds are riding the water, the white of the wing is only slightly visible in the females and immature birds, but is very noticeable in the adult males. Unless the nuptial moult is very late in some individuals, it must take more than one year for the full, green-headed plumage of the adult to be reached, for during April and May, male birds are shot whose plumage is still immature with the exception of a few greenish black feathers about the otherwise brown head.

The Red-breasted Merganser in adult male plumage is distinguished from the American Merganser by his slightly smaller size, by his crest, and by the reddish ring of the upper breast. The differences in the females and immature have already been considered. Mergansers in flight are easily distinguished from Golden-eyes, White-winged Scoters, and other Ducks with white on the wings, by their long bills and necks and narrow heads stretched out straight in front.

42 [131] *Lophodytes cucullatus* (Linn.).

HOODED MERGANSER; "HAIRY-CROWN."

Not uncommon transient visitor; March 18 to April 1; October 7 to November 28.

The Hooded Merganser is occasionally found in the salt creeks. I have in my collection a female shot in the creek back of Ipswich Beach on April 1st, 1904, and one was shot there in the fall of 1902. It appears to be more at home, however, in fresh water. Thirteen were shot at Wenham Lake from Dr. Phillips' shooting booth in 1900, one flock of five among them; nine in 1901; one in 1902; seven in 1903; two in 1904. The first fresh-water Ducks seen in the spring of 1904 by Dr. Phillips, were a pair of these birds on March 18th, in the brook that flows from Beaver Pond, Beverly. In the autumn, most of the birds are in immature plumage, and the full adults are very rare.

The adult male Hooded Merganser is easily distinguished from the two other Mergansers by its much smaller size, conspicuous crest and markings. The fact that the white triangle on the posterior segment of the head has a dark outer border distinguishes it from the male Bufflehead if one were to depend on this point alone. In the female and immature, the smaller size and darker breast serve to differentiate them from the other Mergansers.

43 [132] *Anas boschas* Linn.

MALLARD.

Uncommon and irregular transient visitor; very rare in winter; March 27 to May 1; September 22 to December 1 (January 1).

The January record was of a bird taken in 1883, at Boxford, the specimen being in the collection of the Peabody Academy. The May 1st date is the record of a single bird seen by me, in 1904, in a flock of two or three hundred Black Ducks off Ipswich Beach.

The Mallard has the same habits as the Black Duck with which it often associates when here, but it appears to be much less wild; in fact it is the tamest of the Ducks. While common on the coast south of Cape Cod, it appears to avoid the shores north of the Cape except on irregular occasions. Thus in a record of ten years at Chebacco Lake, from 1894 to 1903, inclusive,

Mallards were shot in six only of these years. From one to five were shot yearly except in 1901 when eight were secured, and in 1897, nineteen. In the fall of 1901 there seems to have been a flight of these birds, for Mr. T. C. Wilson shot sixteen at Eagle Hill, Ipswich, during the week after the storm of November 25th. This was the entire flock. Between October 18th and November 27th of the same year Dr. J. C. Phillips shot fifteen at Wenham Lake and eight were shot at Chebacco Lake as above recorded. In the fall of 1904, there was another flight of Mallards in Essex County, nineteen being shot on October 23d, at Hood's Pond, four at Wenham Lake, one or two at Chebacco Lake, and seven in the creeks near Ipswich Beach. A count at Faneuil Hall Market, Boston, by Mr. J. H. Hardy, Jr., showed nearly one hundred Mallards sent there from Essex County during this week. In November, 1904, I saw at least fifteen of these noble birds on Spot Pond, just over the southwest border of Essex County.

The drake Mallard, the familiar barn-yard Duck, is easily recognized by his beautiful green head, white neck-ring, and light gray back and sides. The white in his wings and edges of the tail is also a good field mark. The female and young resemble more closely the Black Duck, but are of a light buff color and beautifully streaked. The two white bars in the wings and the pale edging of the tail can be made out with a glass at a considerable distance.

44 [133] *Anas obscura* Gmel.

BLACK DUCK ; DUSKY DUCK ; "SUMMER BLACK DUCK " ; "SPRING BLACK DUCK."

Resident : common in summer ; abundant transient visitor ; common in winter.

Eggs: April and May.

As the habits of the two races of Black Ducks are identical, I have considered them together, recording under the Red-legged subspecies my observations on their relative abundance and relation to each other.

During the spring while the bogs among the Ipswich dunes are flooded with water, the Black Duck is to be found feeding there in small numbers and perhaps breeds. Thus the count kept in 1903 was as follows : April 19th, 24 ; May 3d, 2 ; May 10th, 11 ; May 24th, 7 ; May 30th, 7 ; June 7th, 5 ; June 14th, 5 ; June 25th, 7 ; July 12th, 7 in lagoon back of beach ; July 27th, 15 just off beach. In the Topsfield meadows during these months several pairs can always be discovered, and Mr. J. M. Dodge has found them with broods of ducklings.

During the spring and summer, flocks of Black Ducks visit the salt marshes at night, and return westward to the fresh marshes in the day, probably to hide and sleep. Thus on August 13th, 1903, at 4.30 P. M., a flock of from 15 to 20 Black Ducks flew from the west and settled in the salt marshes near Hog Island. On August 14th, a flock of 40 did the same. On August 16th, I noted a flock of about 40 descend into the same place at 4 P. M. Again on April 23d, 1904, Mr. Dodge told me that he saw a flock of 30 or 40 Black Ducks flying westward over the railroad station at Hamilton, at 7 A. M., apparently bound for the Topsfield marshes. These had evidently spent the night in the salt marshes.

In winter, the loud quacking of these Ducks can be heard as they feed in numbers in the salt marshes at night. In pleasant weather, although a few remain concealed in the smaller creeks, nearly all fly out about sunrise to rest during the day on the ocean. In stormy weather many spend the day in the marshes, feeding and flying about. When they fly out in the morning, they begin to go before it is light and continue until the sun is well up. In the creeks, they may be seen feeding in the shallow water, occasionally tipping their tails high in the air in their efforts to reach some choice morsel. Wounded birds hide in the water and grass and occasionally dive. I have seen semi-domesticated Black Ducks while courting, occasionally dive completely under water. Dr. Phillips tells me that he has twice seen Black Ducks dive at the flash, and coming up, rise directly on the wing. One of these he shot so that there could have been no mistake in the bird. Their bodies are so well protected by their feathers and wings, that it is said to be impossible to kill Black Ducks when they are feeding with heads under water.

It is a common idea among gunners that Black Ducks detect a man's presence by the sense of smell and this is confirmed by D. G. Elliot.¹ I have too great respect for the keen eyesight of this Duck to think that it needs the sense of smell and I am very skeptical on this point. I have been in a blind with three other men and have seen Black Ducks walk up on a beach within twenty feet of us without showing any sign of suspecting our presence. In this case the wind was blowing from us to the Ducks, but we were thoroughly concealed. On another occasion I approached, walking down the wind, within fifty yards of eight Black Ducks and they did not rise till they saw me. They were in a pool and were entirely hidden from me by a high sand dune. If they had been conscious of my presence by smell they would have departed long before.

During the winter, one of the most interesting sights on the beaches is a

¹ D. G. Elliot: *The Wild Fowl of the United States and British Possessions*, p. 106, 1898.

large flock of Black Ducks. They are so closely packed together that at a distance the uninitiated refuses to believe they are birds and thinks the dark masses are old timbers from a wreck washed up on the beach. Although I have frequently found them there on calm days, the largest flocks are to be looked for in windy weather. Thus on February 25th, 1901, I have noted 500 on Ipswich Beach in a fierce wind. On March 10th, 1901, with Mr. H. M. Spelman, I spent some time lying behind a sand dune vainly trying to count a mass of these dark birds on the beach, where they were resting from battling with the waves. The wind was strong from the east, and the surf high. We finally concluded that there were about 600 but I think our estimate was conservative. On April 5th, 1903, Mr. R. S. Eustis and Mr. Harold Bowditch estimated the number in a flock of Black Ducks on Ipswich Beach to be at least 2000.

At other times, Black Ducks may be seen bedded in great flocks from two or three hundred yards to half a mile off the beach. On the beach they stand on one or both legs or squat with body resting on the sand, and sleep with head thrust down in front in the feathers of the breast, or buried behind in the scapulars. On the water a few in a flock are often asleep, but the sleepest set I ever saw was a flock of 600 or more spread outside the beach in a line about half a mile long. Nearly all were asleep with heads tucked in the back, and in this headless condition they looked like a herd of seals. They were all turned breast to the slight breeze and they apparently did not drift. One or two here and there, however, had their heads up, and every now and then one would stretch by sitting up and flapping its wings. This was a nearly calm, warm, misty morning at 6.30, on April 8th, 1904. When the ponds first freeze, the Black Duck may be seen in large numbers sitting on the ice. Both from the water, and from ice or the sand beach, Black Ducks take flight by a vigorous bound into the air (see page 23); no shelldrake floppings for them, no digging of toenails into the sand! Their powerful wings are sufficient.

The flight of the Black Duck is swift and direct and the gunner who aims at the first Duck in a line of ten is lucky if he drops the last bird. The roar of wings when a large flock rises, is loud, and the whistle of wings as they fly is keen and breezy, very different from the whistle of the Golden-eye, and not as loud.

Dr. J. C. Phillips, who has carefully watched the movements of waterfowl at Wenham Lake for a number of years, has kindly written out for me the following observations on the Black Duck.

"It has always seemed to me that there were three more or less distinct flights of Black Ducks observed here at the pond. The outside dates for these three flights are about as follows: September 14th to October 5th;

October 1st to October 31st; November 1st to November 20th. These dates vary of course according to the season.

The first flight consists mostly of young and often imperfectly feathered birds and is sometimes the largest, sometimes the smallest of the three flights. Thus, in 1900, only a very few birds were seen up to October 8th, while in 1903 and 1904, the first flight was more marked than the second. The first of the Ducks are hastened along by an early frost or cool northwest weather and their approach can be predicted almost to a certainty by a flight of Ospreys which precedes and accompanies them. The Ospreys begin to come by in some numbers two or three days before the Ducks arrive, and their flight seems to be at its height during the first day or two of the duck flight. Black Ducks on this flight are very often accompanied by Pintail and Blue-winged Teal. My recorded dates for this flight are as follows: September 27th to October 2d, 1900; September 22d to 30th, 1901; September 25th to 29th, 1902; September 24th to October 1st, 1903; September 14th to 28th, 1904.

The first and second flights sometimes merge into one another but are commonly separated by an interval of some days to a week or more, during which time few birds are observed. The second flight is scattered over a longer period and is accompanied by various other varieties of Ducks. Widgeon and Mallard are often seen with Black Duck at this time and sometimes Pintail. The Red-legged subspecies is common during this flight but rare among the early Ducks. The second flight is much more pronounced during certain weather. Thus on the end of a stormy northwest wind or during brisk southwest weather, more birds are noted than at other times. At night, there are apparently many bunches which alight in the pond for a very short period of rest, and which leave of their own accord. These night flights are seen almost entirely during southwest winds and probably occur as often on dark as on moonlight nights. The dates for this flight are as follows: October 8th to 20th, 1900; October 4th to October 31st, 1901; October 7th to 26th, 1902; October 2d to October 27th, 1903; October 2d to October 20th, 1904.

The last flight is a more scattering and irregular affair and consists mostly of the Red-legged variety. Some of these birds probably winter not far away. The Red-legs average heavier and are a much wilder bird. They take to the larger ponds only and nearly always approach decoys with caution. They can sometimes be distinguished on the water by their thicker and shorter necks and more compact bodies. I have twice seen *A. o. rubripes* dive at the flash of a gun after the manner of some of the diving Ducks and come out of water flying. The Red-legs are always beautifully feathered and usually plump, and are highly prized by the pond gunners. Late in November, these birds sometimes come to the ponds from the neighboring marshes of Essex and Ipswich and are

then easily told by their stronger smell. The dates for this flight are as follows: November 4th to 17th, 1900; November 3d to 15th, 1901; November 5th to 15th, 1902; November 7th to 21st, 1903; October 31st to —, 1904. Red-legs have been taken in the pond well along in December, but these were probably local birds."

The methods pursued in the shooting of Black Ducks have already been described (page 41).

A flock of Black Ducks on the water can be distinguished from American Scoters by the fact that the birds do not dive, while the latter rarely refrain from that act for many minutes. The larger body and especially the longer neck and longer and more delicate head and bill of the Black Duck, are also distinctive. In flight, the nearly white lining of the wing of the Black Duck is very characteristic, and can be made out at great distances. The red legs and yellow bill as well as the larger size of *rubripes* distinguish it even at some distance from *obscura* with its dusky olive bill and brownish legs, but one must have a good light to make out these points. The streaked throat of *rubripes* and the immaculate buffy throat of *obscura* are points of great service in the dry skins where the original colors of bills and legs are lost.

45 [133a] *Anas obscura rubripes* Brewst.

RED-LEGGED BLACK DUCK; "WINTER BLACK DUCK."

Abundant transient and winter visitor; September 22 to May 1.

It is the general belief among gunners that the Red-legged Black Duck is seen only in the winter, coming here after the early flight some time in October. As to which form is the more abundant in winter there appears to be a considerable difference of opinion. Mr. T. C. Wilson, the Ipswich gunner, told me that he always considered the larger red-legged bird the male, the smaller one the female, and thinks they are in about equal proportions during the winter. Other gunners, however, have assured me that the smaller bird is the more abundant of the two, while still others consider the red-legged one the more abundant.

The fact that more of one or other of the subspecies are shot does not necessarily mean that that one is the more common at that particular season. It may mean simply that that subspecies was the more common at the station where the shooting was done, or that it was less wary and came in better to the decoys. This may explain the difference of opinion found among gunners,

although it must be remembered that these differences of opinion result from general impressions, which are often unreliable. Mr. J. H. Hardy, Jr., has made careful record of some of the Black Ducks sent to Faneuil Hall Market in Boston, from Essex County during the season of 1904-5. From September 1st to the 21st all the Black Ducks were of the smaller form. On September 21st the first *rubripes* from this region was sent. The record is as follows:

Date.	<i>A. o. obscura.</i>	<i>A. o. rubripes.</i>
September 21	65	1
September 23	50	1
September 28	18	1
September 29	10	1
September 30	52	1
October 3	68	2
October 7	6	2
October 8	51	3
October 10	45	4
October 13	22	3
October 17	40	2
October 24	10	1
October 29	2	2
November 7	15	1
November 10	2	5
November 18	0	4
November 18-30	no record	no record
December 15	2	6
December 21	1	5
January 3	2	6
January 9	2	4
January 10	1	6

The record necessarily ends here as this goes to press, but a note will be added at the end of the Annotated List continuing these observations by Mr. Hardy throughout the winter. Mr. Hardy and I also examined for sex twenty-five Black Ducks taken in January in Essex County, after first making note of the color of the legs, color of bill, and as to whether the throat and chin were buffy and free from spots or spotted. The results were as follows: fifteen large birds with yellow bills, red legs, and chin as well as throat spotted, were all males. Of six birds with yellow bills, red legs, and spotted lower throats but with a clear buffy area $\frac{1}{4}$ to $\frac{3}{4}$ of an inch in depth on the chin, five were males and one was a female. Two birds with green bills, brown legs with a reddish tinge, and spotted throats proved to be one a male, the other a female. Two birds with

green bills, brown legs, and buffy throats were both females. Four of the red-legged, yellow-billed birds had small irregular patches of black feathers on their throats. These patches I took to be evidence of Mallard blood. In examining Black Ducks, I have often had considerable difficulty in deciding to which form a bird belonged. There are all gradations in the color of the bill from yellow to green, and in the legs from bright red to dirty brown. The size of the birds also varies greatly. The thickly spotted throat is generally associated with large birds and red legs, but I have examined several birds that were typical of *obscura* with the exception of the spotted throat.

Mr. Hardy, whose experience in handling Ducks in the market is a considerable one, tells me that he always classes the typical red-legged birds as old males. The large shaggy heads and the tough frames and flesh lead him to this belief.

Assuming, for the sake of argument, that *rubripes* is merely the adult male of *obscura*, it is interesting to note the similarity in seasonal distribution, between these two forms and the adult male Red-breasted Merganser as compared with the very differently plumaged females and immature. In both cases the small, obscurely dressed birds come first during the early autumn, while the large showy birds come in late September and in October. In both, these large birds are abundant in the winter, and the smaller ones are less common, while in both, the two forms appear again in the spring. The remark of Dr. Phillips (*antea*) that "the first flight of Black Ducks consists mostly of young and often imperfectly feathered birds" is interesting in this connection. These observations are of course insufficient for definite deductions, and are offered merely as a contribution to the study of the subject. I have made no observations on the adult male breeding bird in summer in Essex County, and as far as I know this has never been done. Its value in the discussion is obvious.

The recognition of *rubripes* in the field has already been spoken of under *obscura*.

Hybrids between the Black Duck and the Mallard are not uncommon. There are two of these in the collection of the Peabody Academy, both from Ipswich, one dated March 20th, 1883, a male, the other March 20th, 1893, a female. Out of twenty-five Black Ducks from Essex County, I found, as mentioned above, four which seemed to show evidence of Mallard blood.

46 [135] *Chaulelasmus streperus* (Linn.).

GADWALL; GRAY DUCK.

Rare transient visitor; October 2 to November 1.

There is a male in the collection of the Peabody Academy, taken in Essex County in 1868, by S. Jillson. In 1904, there was almost a "flight" of these rare birds. Three were shot near Newburyport as follows: one on October 2d, now in my collection; one on October 23d, which I saw in the flesh; and the third on November 1st. Dr. J. C. Phillips shot one at Wenham Lake on October 26th. It is interesting to note that in the same year six were taken at one time, on October 29th, at the Middleboro Lakes in the southern part of the State.

Howe and Allen¹ record only two specimens for the State, taken at Springfield, many years ago.

It is to be remembered that this bird is practically unknown to gunners here, and the term "Gray Duck" as used by them generally means Pintail, but may mean almost any of the Ducks.

47 [136] *Mareca penelope* (Linn.).

EUROPEAN WIDGEON.

Accidental visitor from Europe.

There is in Mr. William Brewster's collection the head and one wing of an adult male of this species, shot at Marblehead, on December 29th, 1900. Its body had been plucked and eaten at a restaurant in Boston, but it is fortunate that its distinctive head was saved to tell the tale and make its record.

Howe and Allen² give one indefinite and one certain record for the State, not mentioning this specimen.

¹ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 51, 1901.

² R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 51, 1901.

48 [137] *Mareca americana* (Gmel.).

BALDPATE; AMERICAN WIDGEON.

Uncommon transient visitor; March 22 to 27; September 6 to November 27.

The Baldpate is found sparingly in Essex County during the migrations. It frequents especially the ponds, although it is occasionally found in the fresh-water rivers and rarely in the salt creeks. As the Scaups are often called Widgeons by gunners it is necessary to see the birds to be sure of their identity.

The Baldpate, being unable to dive, makes use of diving Ducks to obtain food in deep water, and has therefore received in some places the name of "Poacher." The bird is so uncommon in Essex County, however, that it has no local name. I have seen a flock of five Baldpates eagerly following half a dozen American Coots that were frequently diving in a pond and bringing up weeds from the bottom. The Baldpates gathered about the Coots as soon as they emerged on the surface and helped themselves to the spoils, tipping up occasionally to catch some sinking weed. They seemed even to be able to perceive the Coot coming up through the water, for they would begin to swim towards the spot just before the Coot emerged. The Coots appeared to take the pilfering as a matter of course; in fact they pilfered from each other, and continued to work for themselves and the poachers.

The adult male Baldpate may be distinguished by his pale neck and head, the latter becoming almost white on the forehead and crown, by the dark green patch through and behind the eye, by his wine-colored breast, and white abdomen. The females and young when swimming might at a distance be mistaken for female Mallards, although smaller and darker. When they tip up to feed, however, the white abdomen is seen, and this is also displayed when they stand up in the water to flap their wings. In flight, the white abdomen and the abrupt ending of the brown of the breast are also distinct field marks. Another point of difference I have noted when watching the two birds together on a pond, is that the under surface of the wings of the Baldpate is gray, that of the Mallard snowy white. A white bar is visible in the wing of the Baldpate and two are seen in that of the Mallard.

The distinction between the young Baldpate and the young European Widgeon is a difficult one, but several doubtful specimens from the County submitted to Mr. Brewster were all referred to the American species.

49 [139] *Nettion carolinensis* (Gmel.).

GREEN-WINGED TEAL.

Uncommon transient visitor ; April ; September 12 to December 9 (about January 1).

The January record is from a specimen in Mr. Brewster's collection taken in the Essex River "about January 1st, 1890." While uncommon at both seasons, and far less common than the Blue-winged Teal in the autumn, the Green-winged is the more common in the spring. I was once asked by an Ipswich gunner whether the green-winged bird might not be the Blue-winged Teal in spring plumage. He had never seen the Blue-winged Teal in the spring although he shot many in the fall. The two species are sometimes found together. Thus on September 22d, 1902, Mr. J. M. Dodge had four Teal drop in to his decoys in the Topsfield marshes ; he shot them all and found the two species were equally divided. The habits of the two species are similar.

Adult males in the spring are distinguished by the chestnut head with green patch behind the eye and white crescent in front of the bend of the wing. All the birds in the early autumn are in the dull, immature plumage similar to that of the Blue-winged Teal with the exception of the wing markings which are often covered up as they swim.

50 [140] *Querquedula discors* (Linn.).

BLUE-WINGED TEAL.

Rare spring, common autumn transient visitor ; April 25 ; August 16 to November 25.

Common, and at times abundant during the autumn migrations, the Blue-winged Teal is rarely seen in the spring, as it takes an interior course at this season. It frequents especially the smaller ponds and mudholes and the wet grassy places chiefly in the fresh but also in the salt marshes. To illustrate its abundance at times, may be mentioned the fact that on September 12th and 13th, 1904, 320 Teal of this species were sent by gunners of Newburyport to one stall in Faneuil Hall Market, Boston. I saw one of these gunners' bags on

the 12th that contained thirty-five Blue-winged Teal and one Green-winged Teal. On the same day a flock of twenty-five flew into the marshes at Ipswich, near my house, and Dr. Phillips saw a flock of about fifty at Wenham Lake. The autumn flight is generally at its height in September.

Teal are very rapid flyers, and mass together when in flocks both in the air and on the water. They are very silent birds, and generally drop quietly into the water among decoys, and begin to feed at once. I have, however, heard them croak harshly. They are not shy, and when members of the flock are shot, the remainder which have sprung vigorously into the air and made off, are almost sure to return if the dead birds are left where they have fallen on the water.

The adult male in full plumage with the white crescent in front of the eye is rarely seen except in the spring. In the chief fall flight, all the birds appear in inconspicuous light gray plumage, even the beautiful pale blue of the lesser wing coverts being often entirely concealed as they swim. The white lining of the wings with black upper edge shows when they stand up and flap their wings. Their heads and bills look large in proportion to their slender necks, but the small size of Teal generally distinguishes them without difficulty from other Ducks.

51 [142] *Spatula clypeata* (Linn.).

SHOVELER; "SPOONBILL."

Rare transient visitor; September 16 to November 7.

There is an adult male in the Essex County collection of the Peabody Academy, taken in 1868, by S. Jillson. There is also a specimen in the collection of the late Dr. Charles Palmer, of Ipswich, presumably taken in Essex County. Mr. William Brewster has in his collection a young male that was shot at Ipswich, October 1st, 1880. Mr. T. C. Wilson tells me that he shot three at Eagle Hill from 1880 to 1883. Mr. G. L. Woodbury shot one at Ipswich about the same time. Mr. A. B. Clark says he has shot six at Eagle Hill, the last one in September, 1902. I have seen three of these, all in female or immature plumage, mounted. There is a mounted bird of this species in the Brown Square Hotel, in Newburyport, taken in that neighborhood. Dr. J. C. Phillips shot one at Wenham Lake on October 8th, 1901, and another on November 6th, 1903. Two were shot on Chebacco Lake on October 13th, 1902, and one on November 7th, 1899. I have in my collection a young male shot by Mr. Mosely, at Rowley, on September 16th, 1904.

52 [143] *Dafla acuta* (Linn.).

PINTAIL; "SPRIGTAIL"; "GRAY DUCK."

Uncommon transient visitor, especially in the spring; March 8 to March 14; September 11 to November 25.

My only spring dates are of about a dozen of these birds shot at Eagle Hill, by Mr. T. C. Wilson, between March 8th and 14th, 1901; one of these is in my collection. The earliest fall date, September 11th, is of a specimen shot by Mr. Charles Canterbury at Ipswich, in 1893, and now in the Museum of Comparative Zoology, at Cambridge. Dr. Phillips' records for this species at Wenham Lake are as follows: 1900, one shot; 1901, nine shot; 1902, six shot; 1903, three shot; 1904, one shot. I have seen the bird only once in Essex County, namely, in November, 1900.

Although Pintails are sometimes locally known as "Gray Ducks," the latter term is also applied to the immature plumage of Wood Ducks or to any obscurely marked Duck. In the books, Gray Duck means Gadwall.

The long and slender swan-like neck and the long tail feathers in the male as well as the white breast and head markings distinguish this bird. The female, and the young also, have the characteristic narrow neck, but great care must be used to distinguish them, when at a distance, from young or female Mallards, Gadwalls, or even Baldpates.

53 [144] *Aix sponsa* (Linn.).

WOOD DUCK; "SUMMER DUCK."

Uncommon summer resident, common transient visitor; April 3 to November 12 (December).

Eggs: May.

The December date is from a specimen in the High School collection at Brookline, labeled Swampscott, December, 1881.

Formerly more common, this bird is decreasing as a summer resident. During the late spring and early summer a pair or two can often be put up in the fresh marshes about the Ipswich River and in Wenham Swamp. They are said also to breed in Boxford. By the last of August, they are sometimes found

in considerable numbers, collecting at favored feeding places in the fresh marshes. They drop into the pools in twos and threes from just after sunset till dark. Dr. Phillips reports that none were shot from his stand at Wenham Lake until 1903, when eight were obtained. In 1904, four were shot. At Chebacco Lake, a shallower body of water, Wood Ducks are frequently shot.

In swimming they have a habit of nodding the head. They often pick up acorns in the fresh marshes on the edge of the woods, and their crops are sometimes so stuffed with them, that the dead birds rattle when handled.

As the birds start up and fly off in the fresh marshes during the summer, they can be distinguished from Black Ducks by their smaller size, and particularly by their smaller head and less heavy flight. The Black Duck is the only other Duck found in the fresh marshes of Essex County in summer. On the water the beautiful plumage of the adult male is unmistakable. The immature and female may be recognized by the white ring around the eye and the stripe extending back from it, and by the white throat.

54 [146] *Aythya americana* (Eyt.).

REDHEAD.

Rare transient visitor, not uncommon at times in autumn; March 6 to April 3; October 4 to December 9.

My records for Essex County are limited chiefly to Wenham Lake and Dr. Phillips' shooting stand. He records none in 1900; 29 in 1901; 1 in 1902; 22 in 1903; 4 in 1904. I have heard of only two shot at Eagle Hill, and only one at Chebacco Lake.

The beautiful rich chestnut brown head of the male Redhead is noticeable in a good light at a considerable distance. The absence of white in the wing as well as the richer chestnut of the head easily distinguish it from the female Whistler. The reddish color of the latter's neck ends abruptly in grayish white, while in the Redhead it merges into black. Seen in profile, the Redhead's bill gives it a saucy look, while the Canvasback has more of a Grecian outline to its forehead and bill. The latter's head is mahogany rather than chestnut in color. From the Greater Scaup the adult male Redhead is easily distinguished even when the light is poor and the heads look black, by the slaty gray back, and absence of white in the wings. I have watched the two species near together in Boston Harbor and noted these points. The young and females are doubtless often mistaken for Scaups but the Redheads have hardly any white around the base of the bill and lack the white in the wings.

55 [147] *Aythya vallisneria* (Wils.).

CANVASBACK.

Very rare transient visitor; November 13 to —.

There is a pair of these birds in the collection of the Boston Society of Natural History, shot at Newburyport about sixty years ago and presented by Dr. Samuel Cabot.¹ Mr. Dodge tells me that one was shot in the Topsfield marshes by Mr. B. I. Quinby several years ago, and Dr. Phillips reports one shot at his stand at Wenham Lake on November 13th, 1902, this being the first one shot and the second observed there. This specimen is a young male. It must be remembered that a very different Duck, namely the Eider, is sometimes called "Canvasback" in Essex County.

The field marks of the Canvasback are given under the Redhead.

56 [148] *Aythya marila* (Linn.).

SCAUP DUCK; GREATER SCAUP; "BLUEBILL"; "BLUEBILL WIDGEON";
"WIDGEON"; "BLACKHEAD."

Common transient visitor in the autumn, rare in the spring; March 27 to April 17; September 18 to December 26.

The common name of this bird among the gunners of Essex County is "Bluebill," or "Bluebill Widgeon," or "Widgeon," never Scaup. It is possible that the bird may occasionally spend the winter, as it is found in Boston Harbor at this season. While the Lesser Scaup seems to prefer the ponds, this species is found in salt-water estuaries and sometimes in the sea, as well as in the ponds.

Dr. Phillips, in his records for Wenham Lake, has not distinguished between the Greater and the Lesser Scaups during the first four years. He thinks, however, that the proportion during these years was about three of the Greater to one of the Lesser. In 1900, 22 were shot there; in 1901, 18; in 1902, 49; in 1903, 39. In 1904, however, when the two species were carefully distinguished, his records show the Lesser to be much the commoner. Dr. Phillips feels sure that this was an unusual year. Of 48 Scaup shot in 1904, only three were of the larger species, the rest being the Lesser Scaup.

¹ Samuel Cabot: Proc. Boston Soc. Nat. Hist., vol. 2, p. 89, 1846.

He states that Scaups are easily decoyed, sometimes alighting on the triangular pieces of wood on which the wooden decoys are nailed, and allowing themselves to be pulled in within gunshot. One of the most interesting sights is a large flock or "raft" of these birds, as it is appropriately called, on account of their habit of swimming closely huddled together. They are skillful divers and often remain a long time under water. Their flight is swift and direct, and they frequently turn from one side to the other in flight.

With the sun full upon them, the adult males show beautiful greenish, iridescent heads and necks, yellow eyes, and pale blue bills. Except under these favorable conditions, the heads and necks appear black, contrasting beautifully both on the water and in flight with the light gray, nearly white backs, and the white sides and bellies. The tail is black. In flight the front third of the body and front of the wings appear black, the posterior two thirds of the body and the secondaries white, the tail alone being dark. The white at the base of the bill in the otherwise inconspicuous brownish females is very noticeable on side view and gives them rather a comical appearance when they are head on to the observer. Their bills appear as blue as those of their mates.

57 [149] *Aythya affinis* (Eyt.).

LESSER SCAUP; "LITTLE BLUEBILL."

Common transient visitor in the autumn, rare in the spring; March 2 to April 14; October 8 to November 27.

The habits of the Lesser are very similar to those of the Greater Scaup, but the former bird is less commonly found in salt water.

Full adults have purple reflections on the head and neck instead of greenish as in the larger species, but one needs most favorable light to make this out even with a good glass. As a rule, the heads in both species look black. The females and immature in both the species appear to differ in size only. The majority of adults and young are noticeably smaller than *marila* but it is sometimes very difficult to distinguish immature birds even in the hand.

58 [150] *Aythya collaris* (Donov.).

RING-NECKED DUCK.

Very rare transient visitor.

I have only one record for this bird from Essex County : one shot by Mr. C. E. Brown, in 1899, near Beaver Pond, Beverly, and now preserved in the collection of the Peabody Academy, at Salem. It is a bird that rarely approaches the coast.

59 [151] *Clangula clangula americana* (Bonap.).

AMERICAN GOLDEN-EYE ; WHISTLER.

Abundant winter visitor ; October 8 to May 1.

This bird is universally called Whistler in Essex County.

As the Black Ducks go out of the creeks in the salt marshes in the morning, the Whistlers come in, for they are day feeders. Many of them, however, spend the days also on the ocean. About sunset, or just after, they leave the marshes, where sleep in the narrow tidal estuaries would be unsafe, and repair to the broad ocean, where they can float about undisturbed. I suppose all sea birds when sleeping on the ocean point towards the wind and keep in the same place by automatically paddling, as I have seen the Grebes and Black Ducks do while asleep. Whistlers often visit the ponds during the migrations. Dr. Phillips records from nine to nineteen birds of this species shot at Wenham Lake every year from his stand.

Whistlers are powerful flyers and fully justify their common name, for the loud whistling of their wings as they fly can be heard at a great distance, and is often the first thing to call our attention. Their wings vibrate very rapidly, and they are apt to fly high, not keeping close to the water as do the Scoters. In diving, they appear to keep their wings pressed closely to their sides, and sometimes leap forward vigorously. Whether they open and use their wings under water after the manner of the *Alcidae*, the Scoters, and Old Squaws, I have not been able to determine. They have a common habit of stretching the neck and head up straight in the air, and opening the mouth. They also turn over on their backs occasionally, like all water birds, to preen the feathers of their breasts and abdomens. They are extremely shy and rarely come in well to wooden decoys.

As if they were satisfied with the musical character of their wings, they are, with us certainly, very abstemious as regards mouth music. I have never heard them utter a sound.

An interesting sight is a flock of Whistlers inside the lines of surf off the beach at Ipswich. Just before the wave breaks over them, they dive, coming up on the other side. Their courtships begin the last of March and the water foams about their white flanks as the males chase each other.

The adult males are always in the minority at Ipswich as compared with the females and immature birds. Curiously enough the reverse of this seems to be the case in the Back Bay basin of the Charles River, at Boston. Thus on Christmas day, in 1902, I counted eighty Whistlers in this basin, and of these, sixty were adult males.

Either the spring moult in some takes place very late, or more than one year is needed to attain full adult male plumage. Thus a young male in my collection, shot at Ipswich on April 3d, 1904, is as large as the adult male, but resembles the smaller female in plumage, except that it is lighter gray on the upper back, the upper breast is nearly white, and the head is an ashier brown with here and there a scattering of black, but not iridescent, feathers. The testicles were not enlarged.

The measurements of an adult male and female and of two immature males in the spring, in my collection are here given in inches:—

	Date.	Wing.	Tail.	Bill.	Tarsus.
Adult male,	March 19, 1904.	8.50	3.50	1.50	1.40
Adult female,	Dec. 11, 1898.	7.30	3.15	1.31	1.23
Immature male,	March 8, 1877.	8.86	3.50	1.60	1.50
Immature male,	April 3, 1904.	8.50	3.42	1.48	1.52

On May 1st I watched with the glass several young males in a flock of thirty Whistlers off Ipswich Beach. Several of these were destitute of white spots, while others had faint ones. Their mottled rather than snowy white sides and brown heads easily distinguished them from the adult males, and their large size from the adult females.

At a distance, the Whistler may be recognized by the whistling sound made in flying by the rapidly vibrating wings, and by the short chunky form with large head held slightly up. The shape is very different from that of the Red-breasted Merganser although both have large white patches on the wing. The Merganser has a long and narrow neck, head, and bill, which it holds straight out in front. The adult male Whistler on the water is a beautiful sight with his greenish black head, round white spot close to the bill, and snowy white

breast. The white feathers of his flanks roll over his wings. The female and young should not be mistaken for Redheads, a possibility that has already been considered.

60 [152] *Clangula islandica* (Gmel.).

BARROW'S GOLDEN-EYE.

Accidental winter visitor.

In the collection of the Boston Society of Natural History there is a fine male labeled Ipswich, January 27th, 1879. In the records of the late Dr. J. A. Jeffries there is a note written in March, 1878, that a male of this species "was shot off Nahant this winter on authority of Tufts." It is probable that a beautiful male in the collection of the Lawrence Natural History Society, in the Public Library building of that city is this specimen. There is no record attached or in existence, but Mr. Baldwin Coolidge, who originally collected the birds largely by purchase, told me that he remembers that it was shot near Lynn, about 1877. I obtained these two records separately but their correspondence is very perfect. Howe and Allen¹ give only a few other records for the State, not including the 1877 record.

61 [153] *Charitonetta albeola* (Linn.).

BUFFLEHEAD; "DIPPER."

Not uncommon transient visitor, rare in winter; October 9 to December 5 (winter); March 28.

These birds are commonly called "Dippers" in Essex County from the facility with which they dive. They are found in the ocean, in the salt creeks, and in the ponds, though they forsake the ponds as soon as ice closes them. Their flight is almost as rapid as that of a bullet, and by their quickness in diving they can easily distance the shot from the muzzle of a gun. In the autumn the majority of the birds seen are in female and immature plumage but occasionally an adult male may be found with his splendid greenish black head and large triangle of white extending from behind the eye to the top of the head. The

¹ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 55, 1901.

head appears abnormally large. The young and females are inconspicuous birds with a faint white spot below and behind the eye. The small size of the Buffle-head generally makes its recognition easy.

62 [154] *Harelda hyemalis* (Linn.).

OLD SQUAW.

Abundant winter visitor; October 14 to May 22.

The ocean in midwinter seems an appropriate place for this beautiful bird with its snowy plumage, and here at this season off the Essex County coast, it is always to be found. Occasionally they venture into the creeks, and during the migrations they sometimes drop into the ponds. One of their favorite feeding places is close to Lynn Beach.

Throughout their stay here, both in the fall and in the spring, they are very lively birds, frequently chasing each other on the water, the long tails of the males being cocked up at an angle. This chase is sometimes pursued under water, and I have seen them break the surface for a moment with outstretched wing, which looked like the fin of a great fish. In diving, their wings are slightly spread at the moment of their disappearance, and this and the observation just mentioned show that they use the wings for subaqueous flight. When near the surf line they are constantly diving, remaining below water most of the time.

Their flight is very swift and direct, generally close to the water. When alighting they plump into the water with a splash, sometimes skipping like a flat stone before settling down, being carried along by the great impetus of their flight. Their habit of "towering" or flying up in circles so high as to be scarcely discernible has been described by Mr. Mackay¹ who says that he saw a flock of several hundred in Ipswich Bay go up twice within an hour. They are generally in flocks by themselves, but the Red-breasted Mergansers may occasionally be seen with them.

The call notes of the Old Squaws are many and various, resembling, as H. K. Job says, "the music of a pack of hounds on the trail." They are indeed a garrulous set. They call both while flying and when on the water.

Old Squaws in winter are easily recognized by the pointed black wings, the long tails of the males, the black breasts, and particularly by the large amount of

¹ G. H. Mackay : Auk, vol. 9, p. 330, 1892.

white on the body. To one who is familiar with their winter plumage, it is a great shock to see them in summer plumage, which appears to be entirely adopted in some cases by May 10th. They are then like negatives of their winter plumage. Instead of having a white neck and a dark spot about the eye they have a black neck and a light spot about the eye. The color of the feathers about the eye remains in reality nearly the same, a mouse gray, but it appears dark with a white neck, and white with a black neck. The winter birds have besides the patch around the eye, a black spot on the side of the neck which is a good field mark. Young birds in the autumn are sometimes very dark and inconspicuous, lacking much of the white plumage of the adults. The characteristic grayish white patch about the eye is, however, diagnostic.

63 [155] *Histrionicus histrionicus* (Linn.).

HARLEQUIN DUCK; LORD-AND-LADY.

Very rare winter visitor; November 11, November 20.

There are two specimens of this curious Duck in the Peabody Academy collection: a male from Baker's Island, undated, and a young male from Marblehead, dated November 11th, 1883. There is a male in the collection of the Brookline High School from Swampscott, labeled November 20th, 1877.

[156] *Camptolaimus labradorius* (Gmel.). LABRADOR DUCK; PIED DUCK. Two males of this now extinct bird were killed in November, 1854, by Nicholas Pike at the mouth of the Ipswich River; a female was shot by Arthur Thomas at Swampscott, in September, 1862, and C. J. Maynard says he thinks he saw one of these birds in Plum Island River in the winter of about 1872. This has already been considered in the chapter on Ornithological History (see page 62).

[159] *Somateria mollissima borealis* (Brehm). GREENLAND EIDER. This bird may rarely appear as a winter visitor off the coast, but I have no definite records nor specimens from the County. Putnam speaks of it as abundant, but refers, of course, to the American Eider.

64 [160] *Somateria dresseri* Sharpe.

AMERICAN EIDER; "SEA DUCK"; "CANVASBACK."

Uncommon winter visitor; November 19 to April 19.

"Sea Duck" is the name by which the fishermen know this bird along the

coast, and I have also heard it called "Canvasback." It is a sea bird, keeping generally well off the coast. One was killed against the light at Thatcher's Island, on April 10th, 1901. A flock of these birds is said to be found every winter off Milk Island near the end of Cape Ann. They have diminished to about a dozen of late years. They were also said to be common off Marblehead in winter, but are rarely seen there now.

I have talked with a number of old gunners on Cape Ann and they all agree that this Duck has greatly diminished in numbers during the last twenty years. The Eiders used to feed in great flocks near the Salvages, coming in at daylight and drifting off to sea at night. Gunners used to lie in wait for them on these rocks with wooden decoys set out. At times, now, they are reported to be common during the migrations. I have never been so fortunate as to see them off the Essex County coast, but my informants, who are familiar with the birds, agree on the above statements.

65 [162] *Somateria spectabilis* (Linn.).

KING EIDER.

Very rare winter visitor; November 24 to —.

There is one specimen of this bird in the Peabody Academy collection, labeled Marblehead, November 24th, 1889.

66 [163] *Oidemia americana* Swains.

AMERICAN SCOTER; BLACK SCOTER; "BUTTERBILL"; "BLACK COOT."

Common transient and winter visitor; (summer); September 8 to May 24.

The three species of Scoter are universally known as Coot along our coast, although differing very much from the large Rail or Mud-hen, — *Fulica* — to which the name Coot properly belongs. According to Newton,¹ the names Coot and Scoter may be derived from the same French word *Escoote*, although possibly derived from the Dutch *Koet*. The same confusion of terms is found in France, *Macruse* meaning in the south of France a Rail, and in the north of

¹ Alfred Newton: Dictionary of Birds, p. 817, 1893-96.

France a Scoter. The name *Macreuse* indicates that the bird may, on account of its fishiness, be eaten in Lent, an amusing bit of ecclesiastical humor.

Although the American Scoter is the least common of the three Scoters, a few general remarks may be given here, as the habits of the three are much alike. During the summer months a few Scoters are always to be found off the shore, and although these can swim and dive perfectly well, it is probable that a certain proportion are unable to fly, are in other words "cripples" from the winter's shooting. The rest are non-breeding or barren birds. The largest number of Scoters I have seen in summer was a flock of fifteen on July 17th, 1904, most of them White-winged, with two Surf Scoters. Perhaps these were early migrants. Early in September, the adults begin to come from the north in numbers, the young, especially of the Surf Scoter, arriving during the last week of that month. During October they pour along the coast in great numbers, keeping off the shore in pleasant weather, and sometimes going inland in stormy weather. Thus on October 9th, 1900, in a heavy northeast wind and rain, Dr. Phillips reports a flight between 8 and 11 A. M., of at least 300 Scoters over Wenham Lake. Only six, however, descended to the surface, and after resting two hours continued on their way. In this weather they fly low over the beach, a habit that is frequently taken advantage of by gunners, as has already been described (page 26).

Although Scoters fly most in stormy weather, and are often found quietly feeding on calm days, still they sometimes go south in great numbers even in pleasant weather. This flight is greatest in the early morning, but may continue all day. At times flock succeeds flock as far as the eye can see, off the beach at Ipswich. Occasionally four or five exclusive ones go along together, but usually the flocks are much larger, up to five or six hundred. These sweep along at times in one long line close to the water. Anon they press together in a compact and solid square. Again they spread out into a long line abreast, or form a V, and at all times they rush along with irresistible energy. On reaching the angle at Annisquam where Cape Ann juts out boldly, the birds are often at a loss what to do. Sometimes they fly first one way and then another, rising higher and higher all the time, and then strike out towards the end of the Cape, over which they resume their southerly course at a considerable height. Another flock will turn at the angle without pausing and skirt the shore around the Cape. Again, a flock will pause and fly high at the angle, then along the coast, soon to descend to the original height above the water and round the end of the Cape. All these are methods commonly adopted. Occasionally a flock will get discouraged on reaching the solid barrier of the Cape, will turn back and drop into the water to talk it over. All this shows the dislike of the Scoter to fly over the land. Many of these observations on the Scoters as well as on

other waterfowl, were made from the dune shown in the frontispiece. In stormy weather, I am told (and I have no doubt of it from their actions elsewhere), they fly directly over the base of the Cape, but the storm prevents this being seen from Ipswich Beach.

The different species of Scoters fly by themselves or in mixed flocks. In the latter case the different species are generally grouped by themselves in the flock. As to which species is the least common there is no doubt, namely, the American Scoter. But opinions differ as to whether or not the Surf Scoter is commoner than the White-winged species. My own observations place the Surf Scoter as the more common of these two. At Wenham Lake, Dr. Phillips has found the Surf Scoter the least common and the White-winged the most common, while the American Scoter occupies a middle place. His records there for the three species are as follows: in 1900, 12 shot; in 1901, 7 shot; in 1902, 12 shot; in 1903, 18 shot; in 1904, 15 shot.

Although the Scoters commonly enter the mouths of the Essex, Ipswich, and Merrimac Rivers, they are not often found in the smaller creeks among the marshes. After the middle of November, and during the winter, Scoters are to be found commonly off the shore, but never as abundantly as in the migrations. They have probably diminished considerably in numbers at this season of late years. They fly back and forth about sunrise, and if the weather is pleasant, remain feeding quietly during the day. In stormy weather the Scoters often collect in great numbers inside the bars close to the beach, diving under the breakers as they roll shoreward. In the spring, Scoters are not seen in such numbers as in the autumn migration.

It is unusual to see Scoters on the shore. On October 11th, 1903, in a northeaster, I saw a young Surf Scoter standing on the edge of the beach. His legs were so far back and his breast and head were so upright that he looked like a small Cormorant. On wounding him, he took to the shallow water and I after him. He dove and I could see him flying along under water using his wings. In his weakened condition I managed to overtake him and seize him by the neck. It was, however, a close race. In diving, the wings are flopped open just as they go under water, in preparation for the subaqueous flight. Scoters, especially when wounded, sometimes swim with only the head above water to escape notice.

In calm weather Scoters have much difficulty in rising from the water, and sometimes flap along the surface for many yards, before they can rise above it.

The pursuit of Scoters by gunners, "cooting" as it is called, has already been described (page 16). On days of heavy flight there is an almost continuous fusillade going on along the Essex County coast.

On the water, Scoters are easily distinguished from the other dark Duck

of this region, the Black Duck, by the fact that they are constantly diving; but both on the water and in flight, the short necks and large heads of the Scoters together with their chunkier bodies easily distinguish them from the longer, more clipper-built Black Duck whose white wing-lining is always diagnostic. All the Scoters cock their tails up at times in such a way as to suggest Ruddy Ducks. I have watched a White-winged Scoter asleep with its head tucked into the back feathers, and its tail partly spread and cocked up so that the bird looked for all the world like a huge Ruddy Duck. The shorter tail of the Scoter in proportion to the size of the bird should, however, distinguish it.

The adult male American Scoter is very black, wings and all, and the swollen yellow base of the bill is a conspicuous mark. The female and young have bills of ordinary shape. They are sooty brown above and much lighter, grayish white below. The American Scoter is noticeably smaller than the White-winged Scoter.

67 [165] *Oidemia deglandi* Bonap.

WHITE-WINGED SCOTER; "WHITE-WINGED COOT."

Abundant transient visitor, common in winter; (summer); September 6 to June 4.

As a few always spend the summer and as I saw as many as thirteen together off Ipswich Beach on July 17th, 1904, it is rather difficult to set the date for autumn arrivals. The habits of this bird have already been given under the American Scoter.

The White-winged Scoter is easily recognized in flight by its broad white wing-patches. These, however, although they sometimes show, are often invisible when the bird is swimming, whereas in the Red-breasted Merganser and the Whistler these white patches are almost always noticeable. This Scoter is apt to give himself away, however, by standing up in the water and flapping his wings. The adult male is glossy black, with a small white mark under the eye which can be seen at a considerable distance with a good glass. The swollen red and orange bill can also be made out with a glass. The female and immature are sooty brown and show a faint white spot at the base of the bill, and a more distinct one behind the eye.

68 [166] *Oidemia perspicillata* (Linn.).

SURF SCOTER; "SKUNK-HEAD"; "GRAY COOT."

Very abundant transient visitor, common in winter ; (summer) ; September 4 to June 4.

This is the most common of the three Scoters and its habits as well as the characteristics of Scoters in general have already been discussed under the American Scoter.

The Surf Scoter is easily recognized in the full adult male plumage, when he is commonly known as Skunk-head. He is glossy black with swollen yellow and scarlet bill, a white spot on the forehead, and a larger one on the nape. The female and young bird, called by gunners Gray Coot (although this name is also applied at times to the immature White-winged Scoter), are grayish brown and have two white spots on the side of the head, one at the base of the bill, the other behind the eye. These are generally equally distinct, while in the White-wing the patch at the base of the bill is usually faint. In the immature birds there are often traces to be seen of a white spot on the nape.

69 [167] *Erismatura jamaicensis* (Gmel.).

RUDDY DUCK.

Common transient visitor ; spring ; September 30 to December 1.

The Ruddy Duck is rarely seen on the ocean and salt creeks, and I have no record of its being shot in the smaller waterways of the fresh marshes, for it prefers the deep-water ponds. Here singly and in small or large flocks, their tameness or stupidity make them the mark of the gunner, but their capacity for diving at the flash makes them difficult to secure. A flock can sometimes be closely approached by a boat and all killed. At other times a flock may continue feeding undisturbed by shots fired at other Ducks not far off. When pursued they often sink themselves low in the water, but at other times they generally ride buoyantly.

Their small size and chunky build and especially the shape of the head with its low forehead and thick neck make them easy to recognize. They also cock their tails into the air in a characteristic way — a capital diagnostic mark,— but it is to be remembered that they do not always do this, and also that the Scoters

have the same trick. The latter are, however, much larger and their tails are relatively and also absolutely shorter. Apparently all the birds seen or shot here in the autumn are in a plumage similar to that of the immature bird, with dark upper and grayish white lower part of the head. This marking can be made out at a considerable distance with a good glass. The bright ruddy tints and pure whites of the full-plumaged birds I have never seen at this season.

70 [169] *Chen hyperborea* (Pall.).

LESSER SNOW GOOSE.

Very rare transient visitor in the autumn.

There is a specimen in the Peabody Academy, taken at Lynn Beach in 1886, and mounted by Vickary. A male was taken at Ipswich on October 26th, 1896, by a local gunner and is now in the collection of Mr. William Brewster.¹

Mr. W. H. Vivian, who shot a Whistling Swan, in 1902, off Ipswich Beach, told me in December, 1903, that some two weeks before, or in November, 1903, he saw a flock of about fifty white birds resting on the beach at Ipswich with their heads concealed in their feathers. He thought at first they were Gulls, but they got up and flew off honking and he saw that they were white Geese. He fired at them without effect. A few weeks later I talked with Mr. G. Loring Woodbury at Ipswich about birds seen and shot. He volunteered the information that about the last of November he had seen, nearly a mile off at the beach, a flock of forty or more white Geese "as white as Gulls." As these two stories correspond so closely and as both my informants are reliable men, there seems no doubt but that a large flock of Snow Geese wandered this way in November, 1903. Mr. Woodbury also stated that his father shot a Snow Goose at West Gloucester about forty years ago.

[169a] *Chen hyperborea nivalis* (Forst.). GREATER SNOW GOOSE. Although there are no means for substantiating the statement, it is probable that this subspecies was found along the coast in the early days of the County, but has long since been extirpated.

¹ Wm. Brewster : Auk, vol. 14, p. 207, 1897.

71 [169.1] *Chen caerulescens* (Linn.).

BLUE GOOSE.

Accidental visitor.

A young female was shot in or near Essex Creek, West Gloucester, on October 20th, 1876. The mounted specimen is now in the collection of Mr. W. A. Jeffries.¹ This is the only record for the State.

[171a] *Anser albifrons gambeli* (Hartl.). AMERICAN WHITE-FRONTED GOOSE. A specimen of Blue Goose (*Chen caerulescens*) shot near Essex, in 1876, which came into the possession of Mr. W. A. Jeffries, was at first thought to be this species and was so reported by Dr. Brewer.² The White-fronted Goose is believed to have been formerly an uncommon transient visitor. Dr. Brewer² says that "between 1836 and 1846, [it] was much more common than it apparently is now." I have placed it among the doubtful species as there are no specimens in existence from the County.

72 [172] *Branta canadensis* (Linn.).

CANADA GOOSE; "WILD GOOSE."

Common transient visitor; March 9 to May 25 (June 2, June 5); September 21 to January 10.

My earliest date in the spring was recorded in 1876, by R. L. Newcomb.³ The June 5th date is noted by Mr. A. F. Tarr, who saw a flock off Thatcher's Island on that date, in 1895, and again in 1896. On June 2d, 1877, I saw at Magnolia a belated flock of eight or ten Geese going north. In 1902, several flocks were seen going south in January as late as the 9th, and in 1904, as late as the 10th of that month.

There is no more impressive sight than a flock of a hundred or more Canada Geese flying over in perfect V-form. Their honking is often heard before the birds are seen and increases in volume as the flock approaches, gradually dying out as it disappears in the distance. Years ago I spent a week in April in a town on the coast just over the New Hampshire line, where every one kept a

¹ W. A. Jeffries: Auk, vol. 6, p. 68, 1889.

² T. M. Brewer: Bull. Nuttall Orn. Club, vol. 2, p. 46, 1877.

³ R. L. Newcomb: Forest and Stream, vol. 6, p. 417, 1876.

loaded gun inside his door. As soon as the honking of a flock of Geese was heard, all would rush out and discharge their pieces at the birds who generally swept on undisturbed. Mr. Dodge tells me that flocks of Wild Geese not infrequently alight in the Topsfield meadows in the spring, and if undisturbed they stay several days, leaving the grass trampled down and numerous feathers as mementos. I have seen a few on the beach at Ipswich and have crept up within gunshot, and watched the beautiful birds. On starting three birds there in March, they rose lazily, honking loudly and flew to the ocean where they alighted on the water close to the surf line. One, in fact, was caught by a wave and tossed back, so that he had to rise on the wing and fly out again. The heaviest flight in the fall is generally during the last week of November.

Dr. Phillips states that it is only in or after stormy weather that Wild Geese fly in to Wenham Lake and alight. At other times they fly more to the eastward. They occasionally spend the night resting on the lake. In 1900, between September 28th and December 2d, 144 Geese were seen flying over the lake in seven flocks, while three flocks with a total of 85 birds alighted on the lake. In 1901, between October 20th and November 26th, 247 birds in nine flocks flew over, and 115 birds in seven flocks alighted; 47 Geese were shot. In 1902, one flock of 200 birds flew over, but owing to the mildness of the weather the flight was generally to the eastward. Geese were seen from November 14th to December. In 1903, there was an early flight from November 5th to 8th, and a heavy late one from November 27th to December 3d. In 1904, the flight at Wenham Lake was small; 22 birds were shot. Dr. Phillips keeps a large flock of Canada Geese decoys at the lake as does also Mr. A. B. Clark at his pond at Great Neck, Ipswich. They are also kept at Chebacco and other ponds. Dr. Phillips reports that a Wild Goose, in the spring of 1900, entered one of his pens of goose decoys and was taken alive, and I find a similar event reported at Chebacco Lake.

[172a] *Branta canadensis hutchinsii* (Rich.). HUTCHINS'S GOOSE; LESSER CANADA GOOSE. Putnam¹ records this as common in April and October. This subspecies is more common in the interior and on the Pacific coast of the United States and although it may have been formerly of irregular or even common occurrence, there are no specimens to confirm this, and it is only by careful study of specimens that it can be distinguished from the very similar but slightly larger *canadensis*. It is therefore entered among the doubtful species.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 219, 1856.

73 [173] *Branta bernicla* (Linn.).

BRANT.

Common transient visitor ; April to May 12 ; September 12 to December 6.

The December 6th date records a flock of thirty Brant that I saw, in 1903, flying by Ipswich Beach. They are rather irregular as to their numbers in the migrations along the Essex County coast, many being seen in some years, and very few in others. They rarely appear before October. They occasionally alight on the beach, and although I have never seen them there myself, I have several reports for both spring and fall. On November 25th, 1900, Mr. J. M. Dodge found an enormous flock of Brant on Ipswich Beach, estimated to be over a thousand in number, and more flying by. He shot one of the birds on the beach with a rifle so there is no doubt as to their identification. Brant occasionally alight on the water at the mouths of the creeks and rivers, but as a rule they keep farther out at sea. Dr. Phillips has never seen any at Wenham Lake, but one was shot and several others seen at Chebacco Lake, on November 26th, 1900.

Brant are easily recognized by their smaller size as compared with Canada Geese, and by their black necks and breast. The white streaks on the sides of the neck can be made out with a glass.

[175] *Branta leucopsis* (Bechst.). BARNACLE GOOSE. This Old World species is recorded without comment by Putnam¹ among the accidental visitors. As there is no specimen in existence, I have placed the bird in the doubtful list. Howe and Allen² give only one definite record for the State, of a bird shot at North Chatham, on November 1st, 1895.

74 [180] *Olor columbianus* (Ord).

WHISTLING SWAN.

Accidental visitor.

There is a specimen in the collection of the Boston Society of Natural History shot at Nahant, about 1864, by a Mr. Taylor.³ Mr. C. J. Maynard⁴

¹ F. W. Putnam : Proc. Essex Inst., vol. 1, p. 225, 1856.

² R. H. Howe, Jr., and G. M. Allen : The Birds of Massachusetts, p. 50, 1901.

³ Wm. Brewster : Bull. Nuttall Orn. Club, vol. 4, p. 125, 1879.

⁴ C. J. Maynard : The Naturalist's Guide, p. 146, 1870.

says: "Mr. J. F. Le Baron informs me that in former years this bird was occasionally seen at Ipswich; but of late years it has not made its appearance." On November 28th, 1902, a flock of six Whistling Swans was seen in Plum Island River, in Newbury, and an immature bird was shot by George F. Thurlow. It was offered for sale in the Newburyport Market and was purchased by Mr. William Brewster who now has the specimen in his mounted collection. On December 1st, 1902, Mr. W. H. Vivian, of Gloucester, saw and shot a single bird of this species, undoubtedly from the same flock, off the mouth of the Essex River. He has the bird, mounted, in his possession.

[181] *Olor buccinator* (Rich.). TRUMPETER SWAN. This species, now confined to the interior of the continent, is believed to have occurred in the County in the early days of its settlement.

[188] *Tantalus loculator* Linn. WOOD IBIS. In the early eighties, a taxidermist began supplying a museum in Essex County with specimens of unusual birds which, he claimed, were shot in the County. Some of these, as he afterward confessed, were obtained by him from a distance (see page 75). One of these was reported by J. A. Allen,¹ before the fraud was detected. This was the record of the Wood Ibis, which the collector stated was taken at Georgetown, on June 19th, 1880. Later, Allen² said: "The authenticity of the alleged capture [of the Wood Ibis] has since been investigated with care, without eliciting any evidence tending to impeach the record, beyond the fact of the untrustworthy character of my informant."

The only undoubted record of this bird for the State is of a young male in the collection of Mr. William Brewster,³ taken at Seekonk, on July 17th, 1896.

75 [190] *Botaurus lentiginosus* (Montag.).

AMERICAN BITTERN.

Common summer resident; April 4 to October 16.

Eggs: June 10.

During the spring, Bitterns are more common in the fresh marshes, where they generally breed, but after the middle of August they are frequently found in the salt marshes. Here they may often be started from the high grass in which they have been skulking, or may be seen standing motionless with bills pointed upwards. This latter habit seems peculiar to the Bitterns, and is not, as far as I know, shared by the other Herons. I remember the first time I

¹ J. A. Allen: Bull. Nuttall Orn. Club, vol. 8, p. 187 [= 185], 1883.

² J. A. Allen: Bull. Amer. Mus. Nat. Hist., vol. 1, p. 234, 1886.

³ Wm. Brewster: Auk, vol. 13, p. 341, 1896.

discovered this habit, and learned its object. I had seen a Bittern fly into an open marsh, and creeping up under cover to within gunshot, I prepared to shoot him. But there was no bird there, only a stake, and it was not until I had rubbed my eyes and looked hard that I discovered that the stake was the Bittern.

Old Turner,¹ in 1544, speaking of the European bird, says that "it sits about the sides of lakes and marshes, where putting its beak into the water it gives utterance to such a booming as may easily be heard an Italian mile away"; and again,² "so far as I can remember it is nearly of the color of a Pheasant and the back is smeared with mud; it utters brayings like those of an ass." These statements are not entirely correct, but are suggestive. One of the best ways to observe the interesting performance of the love song of this bird, for so the "pumping" or "stake-driving" must be considered, is to approach the performer in a canoe. By paddling quietly but vigorously during the pumping, and remaining quiet during the intervals, one may sometimes steal within close range of the Bittern. The bird stands with bill pointed nearly straight upwards, and the performance begins with from three to six or more gulps as if the Bittern were swallowing air, the neck being held up and the bill opened at each gulp. The gulping sounds are audible within a short range only. Then comes the "pumping," sounding so exactly like the working of an old pump that one expects it to be followed by the sound of gushing water. The *unk'-a-chunk'* is repeated from three to eight times. One bird I found always repeated this either three or four times, another either six or seven times and rarely eight times. The throat is swelled and the head ducked at each pump as if the bird were getting rid of air that had been drawn in. In fact an attempt to imitate the sounds causes almost similar contortions on the part of the imitator. When the bird is a long way off not only the preliminary gulps but also the first part of the pumping are inaudible, and one hears only the final syllable, which resembles the driving of a stake in a bog.

Although the Bittern prefers to breed in the fresh marshes, a few make their nests in or near the salt marshes. On June 26th, 1904, while looking for Sharp-tailed Sparrows in a salt marsh reached only by the high spring and fall tides, I started a Bittern that flew off with a complaining and frequently repeated quacking croak. Soon after I became conscious that a series of four stakes, projecting above the grass, was in reality the motionless necks and bills of four young Bitterns. My companion had noticed them too, but thought they were the remains of a shooting blind. The early age at which this protective

¹ A. H. Evans, ed. and transl.: Turner on Birds . . . first published 1544, p. 125, 1903.

² A. H. Evans, ed. and transl.: *ibid.*, p. 41.

habit was assumed is interesting, for the birds were entirely unable to fly, being only about two thirds grown, and their scanty juvenal feathers were tipped with the fluffy natal down. When closely approached they abandoned this method of deception, snapped their bills loudly in anger, erected the feathers of their necks, spread their feeble pin-feather wings, and sprang defiantly at us, emitting a faint hissing snarl. One that I handled to examine closely, spat up great mouthfuls of small fish. The manner in which they attempted to escape was interesting. Crouching low, with necks drawn in and level with the back, they walked rapidly through the short grass, and we found one drawn up in a small bunch at the foot of the camera stand. Both the motionless and the crouching postures are the familiar protective methods used by the adults.

The nest was found in the open salt marsh within a few yards of the young. It was a thin, flat platform a foot in diameter, made of dry grasses, entirely unprotected except by the surrounding short black-grass.

76 [191] *Ardetta exilis* (Gmel.).

LEAST BITTERN.

Rare summer resident ; May 29 to August 14.

This is an unknown bird to me, although, no doubt, I have often passed it by. I hope to make its acquaintance.

The records for the County are meager. One was flushed in the Topsfield marshes by Mr. Laurence Brooks on May 29th, 1904, and one was shot there by Dr. J. C. Phillips on August 9th, of the same year. There are three specimens at the Peabody Academy : a male labeled, Lynn, 1880 ; a male, Topsfield, June 18th, 1893 ; and a female, from Topsfield, June 26th, 1893. Mr. W. A. Jeffries has a female in his collection shot by Mr. Mixer at Palmer's Pond, Swampscott, on August 14th, 1899.

77 [194] *Ardea herodias* Linn.

GREAT BLUE HERON ; "CRANE."

Common transient visitor ; March 15 to June 4 ; (summer) ; July 27 to November 3, December 2.

I hoped to be able to enter this bird as a summer resident, but I have no

record of its breeding, although it undoubtedly bred in former years. The fact that a few birds are seen in summer would not establish the fact that they were nesting here, for they might be wanderers, or immature or barren birds. I have seen as many as five Great Blue Herons so late as May 31st (in 1903), flying in the early morning towards Ipswich Beach from the interior. During June and July, only occasional single birds or fresh tracks are to be found, but by the middle of August the birds become common, and as many as six may sometimes be seen together in the marshes at Ipswich. These great wading birds are most frequently seen in the salt marshes, but are also to be found on rocky islands, or submerged sand bars, on the sandy beaches, and in the fresh marshes. I have also seen them alight on the peaks of sand dunes, and on tree tops. A Great Blue Heron wading in a small inlet at Ipswich Beach, on May 24th, 1903, continued to fish until the water reached his belly, when he spread his huge wings, doubled up his neck, stretched his long legs behind, and started to fly off in his usual way. He had not gone far before he unbent his neck, curving it around for a moment so that he could look behind, much to the surprise of Mr. Hoffmann and myself, who had been watching him.

These birds are always interesting additions to the landscape, whether on the wing flapping along slowly and sailing majestically, or stalking cautiously about the marsh. An immature bird that I watched on August 15th, 1903, had captured an eel about eighteen inches long. He made several vain attempts to swallow it, grasping it by the middle and trying to shake it down. He finally gave up the attempt and searched for smaller fry. Once on striking at his prey in a deep pool he lost his balance, and toppled over, spreading his wings to break his fall.

In walking in the marshes these Herons lift their feet high and put them down with great care, but I have seen the tracks in the sand where the bird lazily dragged the claw of his middle toe. When he jumped to fly, the sand was indented evidently with some force.

I have had one of these birds fly around and around my blind in the fresh marshes of the Ipswich River, croaking loudly in response to the quacking of the decoy Ducks, stretching out his neck and looking suspiciously about.

Crane Pond, in Groveland, is, I suppose, named after these birds. It is much to be regretted that the Great Blue Heron is gradually diminishing in numbers. Would that all gunners could be made to realize that it is a crime to kill one of these splendid birds!

78 [196] *Herodias egretta* (Gmel.).

AMERICAN EGRET.

Accidental visitor from the south.

Dr. J. A. Allen¹ stated, in 1870, that one was taken near Lynn, by N. Vickary several years previous. There is a fine specimen in the collection of the Lawrence Natural History Society. Mr. Baldwin Coolidge, who formerly owned this collection, told me that this bird was taken at Newburyport, about 1870, by Mr. George Thurlow on the same day that Mr. Vickary shot one in Lynn. There is a pair of these Herons in the Peabody Academy collection, at Salem, both shot at Newburyport, on October 14th, 1878, by R. L. Newcomb. A fifth specimen is in the possession of Dr. F. H. Stockwell, of Ipswich. This bird was brought to him in the flesh, and was shot in the salt marshes there in August, 1899.

[197] *Egretta candidissima* (Gmel.). SNOWY HERON. Given by Putnam² as "Spring. Very rare." There are no known records nor specimens from Essex County, and only three records from the State, *i. e.*, near Boston, in 1862; Northampton, prior to 1887; and Nantucket, in 1881.³

79 [200] *Florida cærulea* (Linn.).

LITTLE BLUE HERON.

Accidental visitor from the south.

There is a mounted bird of this species in the collection of the Boston Society of Natural History, taken at Ipswich, on August 10th, 1881. This is recorded by Howe and Allen.⁴

¹ J. A. Allen: Amer. Nat., vol. 3, p. 637, 1870.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 218, 1856.

³ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 46, 1901.

⁴ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 45, 1901.

80 [201] *Butorides virsecens* (Linn.).

LITTLE GREEN HERON; "SHITE-POKE."

Common summer resident; May 6 to October 2.

Eggs: June 2.

In the spring from 1876 to 1879 inclusive, I found the nests of this little Heron in the grove of pitch pines back of the beach at Magnolia. This region has long since been "improved" and the birds have left. The young birds, with their natal down still adhering to the juvenal feathers and forming a halo around their heads, are expert climbers among the tree tops, long before they are able to fly, as one who attempts to photograph them soon finds to his cost.

When walking about, the adult Little Green Heron twitches his tail downward nervously, and frequently erects and depresses his crest. His neck is certainly an elastic one, as he often draws it in until he appears to have no neck at all, and then stretches it to the length of his body. I once found one sleeping perched on the limb of a tree with neck drawn in. He awoke, stretched his neck to the full extent, shook himself so that all his feathers stood out, and then flew away, uttering his characteristic *peuah*.

One can imagine that the physiological effect of fright in these birds, which has given rise to such classic names as "Chalk-line" and "Shite-poke," must serve a useful purpose in blinding the stealthily creeping pursuer, be it carnivore or savage. Turner¹ speaking of the Heron says: "It routs Eagles or Hawks, if they attack it suddenly, by very liquid mutings of the belly, and thereby defends itself."

Little Green Herons, although they visit the salt marshes, are more common in the fresh marshes.

81 [202] *Nycticorax nycticorax nævius* (Bodd.).

BLACK-CROWNED NIGHT HERON; QUAWK.

Abundant summer resident; March 27 to October 19.

Eggs: May 2 to June 13.

This is by far the most familiar Heron to the dwellers along the seacoast

¹ A. H. Evans, ed. and transl.: Turner on Birds . . . first published 1544, p. 39, 1903.

in Essex County, particularly in the region of the salt marshes. Night Herons are very gregarious, not only in their breeding places or heronries, but also when feeding and migrating. Following the rule of night-feeding birds, they may be seen migrating by day, and it is not uncommon to see, in August and September, flocks of thirty or more flying south. Dr. Phillips noted a spring arrival of these birds on March 27th, 1904, — a large flock alighting in the evening near his Wenham farm.

In late May and in June, one can see these birds to best advantage, for the demands of the young are so great that large numbers of adults are found fishing on the flats in the tidal estuaries in mid-day. At this season too, I have found about 35 Night Herons resting in the pitch pines among the dunes at Ipswich, although they do not nest there. Later in the season, although a few still feed by day, the majority appear to rest at this time, spending the day in the woods away from the shore, or among the trees in the marsh islands. During August, a flock of over 200 may be found in the trees on the north side of Castle Hill, Ipswich. At night, they flock to the salt marshes, to the sand beaches, and to the flats exposed by the tide, uttering their loud *quawks* as they fly. Both on the beaches and on the sandflats of the creeks, it is interesting to find them feeding at night, their spectral forms and weird cries adding to the sense of loneliness produced by the surrounding darkness.

Among the dunes, the beautiful light plumage of the adults matches well the sand. It is not always known that the adult females as well as males have plumes, and the plumes vary in number from one to four, although the latter number is very rare. An old Ipswich gunner calls the full plumaged adult by the curious name of "Dispar Goose," a name I have been unable to find anywhere. In the early spring, just before the eggs are laid, birds in the streaked gray, immature plumage are to be seen, showing that in some cases, at least, more than one year is needed for their full maturity.

Heronries are always interesting places, especially just before the young birds are able to fly. One of these, about five miles from the sea near the middle of the County, occupies from three to four acres in a swamp of some ten acres in extent on the border of a pond. The chief nesting trees are black spruces, larches, and red maples, from thirty to fifty feet high. Where the nests are thickest, much of the small undergrowth is dead, apparently killed by the birds' droppings. I am unable to estimate the number of birds nesting there, but on July 7th, 1904, I counted 38 nests from one spot in the middle of the heronry, and the thickness of the foliage prevented all but near vision. The nests, loosely compacted of stout sticks, were clustered everywhere in the trees, generally about thirty feet from the ground, sometimes five or six in one tree. On that date the young birds had generally left their nests and were everywhere standing motionless like statues in groups of five or six on the tops of the trees.

The noise made by young and old was continuous and varied, reminding one of the din of a poultry show, the typical *quawk* being far less common than croakings, cluckings, and high pitched and rapidly repeated *ki's*. The young were frequently fighting in the branches, flopping about awkwardly, making short flights with dangling legs, and clinging by their large feet. When shaken to the ground they showed fight, swelling out their throats, dabbing viciously with their bills, hissing or shrieking, and raising their wings threateningly. They ran off with wings partly spread and head down, falling occasionally to the ground. Although nearly full grown, many still showed the natal down on the tips of the feathers. The adults appeared to keep discreetly in the background.

Next to the noise, the most impressive thing in a large heronry is the smell, — penetrating and fishy, — reminding one of the Gloucester wharves at low tide. Not only are the ground and bushes covered with the droppings as if white-washed, but the visitor receives his full share.

Stories are told of two bushels of eggs being taken from this heronry fifteen years ago. Its privacy is, I think, more respected now, and I am told that the birds are fully as numerous now as they were ten years ago.

82 [203] *Nyctanassa violacea* (Linn.).

YELLOW-CROWNED NIGHT HERON.

Accidental visitor from the south.

Mr. N. Vickary shot one of these birds at Lynn in October, 1862.¹ There are only five other records for the State in Howe and Allen's list.

[206] *Grus mexicana* (Müll.). SANDHILL CRANE. This is probably the species of Crane that was observed by the early settlers in the seventeenth century (see page 63). The name Crane is now popularly applied to the Great Blue Heron, a very different bird.

83 [208] *Rallus elegans* Aud.

KING RAIL.

Accidental visitor from the south.

One was shot by G. O. Welch at Nahant, on November 21st, 1875.²

¹ J. A. Allen : Amer. Nat., vol. 3, p. 637, 1870.

² H. A. Purdie : Bull. Nuttall Orn. Club, vol. 2, p. 22, 1877.

There is a fine male specimen in the Peabody Academy that was caught in a garden in Salem, on July 10th, 1894, and kept alive three days. Mr. George Patterson shot a King Rail at Ipswich in October, 1901, and gave it to the Peabody Academy. I saw the bird, in 1904, in Mr. Welch's taxidermist shop in Salem. These two last have never before been recorded.

I have heard of at least two other large Rails in Essex County that have been shot and *caten* without a wing or a claw left to tell the tale! They were called Clapper Rails by the gunners but were very possibly King Rails. Howe and Allen¹ give the Nahant record and two others outside the County.

[211] *Rallus crepitans* (Gmel.). CLAPPER RAIL. It is easy to mistake the King Rail for the Clapper Rail. Two specimens of King Rails recorded under that bird were at first thought by the collectors to be Clapper Rails. In fact, several gunners, with whom I have talked on the subject, claim to have killed Clapper Rails, but were ignorant of the existence of King Rails. By their description alone it is of course impossible to distinguish between the two species. In the absence of specimens, I have therefore put the Clapper Rail in the doubtful list, notwithstanding the following oft-quoted record from the Naturalist's Guide: "Mr. J. F. Le Baron informed me that he shot a specimen [of Clapper Rail], some years ago, at Ipswich."²

84 [212] *Rallus virginianus* Linn.

VIRGINIA RAIL.

Common summer resident; April 11 to October 13.

Eggs: May 12 to May 31.

The Topsfield marshes of the Ipswich River are favorite haunts of this bird. Here, in the spring nights, one may hear his *cut, cutta, cutta*, suggestive of a very vigorous telegraphic machine. I have only once found this Rail in the salt marshes, and on that occasion in a marsh reached by the highest tides only.

This was on August 23d, 1904, and the bird behaved in its characteristic way. As it rose on feeble wings within ten feet of me, its long curved bill was noticeable, and at once distinguished it from the short-billed Sora Rail. It soon dropped into the grass within thirty feet, but although I ran at once to the spot and rapidly tramped about through the grass, it had run off like a mouse and could not be flushed again.

¹ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 17, 1901.

² C. J. Maynard: The Naturalist's Guide, p. 145, 1870.

85 [214] *Porzana carolina* (Linn.).

SORA ; CAROLINA RAIL

Common summer resident ; March 20 to October 13.

Eggs : June 9 to 11.

These birds are more common than the Virginia Rail and their whistled *ker-wee* may be heard during the spring in the same fresh marshes. They have in addition a variety of short clucks and whistles heard especially in the autumn. I have also occasionally found them in September in the salt marshes, at Ipswich.

They may at times be seen running rapidly along the surface of floating vegetation, hiding in dark corners when alarmed and skulking off through the grass, or if hard pressed and taken by surprise flying a few feet with drooping wings and dangling legs to disappear again in the grass.

There is a mounted bird of this species, partially albinistic, in the Brown Square Hotel, in Newburyport, that was shot in that neighborhood.

86 [215] *Porzana noveboracensis* (Gmel.).

YELLOW RAIL.

Rare transient visitor ; September 30 to October 13.

Nuttall, in 1834, says that "according to Mr. Ives, they are frequently met with [in the autumn] in the marshes in the vicinity of Salem."¹ There are four specimens in the Peabody Academy collection, from Ipswich and North Beverly, all taken in the fall ; one in Mr. W. A. Jeffries' collection was taken at Newburyport, October 13th, 1877 ; and one is reported as taken at Topsfield, in 1881.² I have never found them, but the white patch on the wings would at once distinguish them in flight.

[216] *Pozana jamaicensis* (Gmel.). BLACK RAIL. On the clear, calm, moonlight night of July 4th, 1903, I had just gone to bed at 9.45 P. M., when there sounded, apparently but a few

¹ Thomas Nuttall : A Manual of the Ornithology of the United States and of Canada, vol. 2, p. 216, 1834.

² [Editor] : Ornithologist and Oologist, vol. 6, p. 64, 1881.

rods from my house, at Ipswich, a distinct and, to me, most unusual call. I wrote it down at the time as *tut, tut, tut, sherec* the last part uttered quickly and with great emphasis, the *tut, tut* given slowly and with hesitation. This was repeated once or twice a minute. I hastened to investigate, and was led by the sound, not a few steps as I at first expected, but some 400 yards, to a reedy and swampy place where a spring emptied itself on the edge of the salt marsh. Here the sound ceased after I attempted to invade the occupant's domain, and did not recur until I had returned to my house. It was never heard after this night, and it remains an "ornithological mystery," which I was convinced it was by again reading next day the article under that title by Mr. William Brewster.¹ Mr. Brewster, Mr. Faxon, and Mr. Spelman, to whom I described my adventure, the character of the cry, and the locality whence it came, all agreed with me that I had probably heard the "ornithological mystery," *alias* the Black Rail. If I ever hear the bird again I have black schemes for its destruction and in that way alone, certain identification. Until then it seems worthy of a place on the doubtful list.

87 [218] *Ionornis martinica* (Linn.).

PURPLE GALLINULE.

Accidental visitor from the south.

There are six records for the County: one taken at Swampscott by S. Jillson, on April 22d, 1852²; one³ shot at Henry's Pond, Rockport, by Robert Wendel, April 12th, 1875; a male in the Peabody Academy collection taken at Saugus, May 10th, 1875; a specimen shot in the spring of (about) 1891, at Byfield, the mounted specimen having been seen at the residence of Mrs. W. S. Horner, of Georgetown, and reported by Mr. J. A. Farley⁴; a specimen in the Peabody Academy collection, taken at West Newbury, October, 1893, by J. W. Pray; a bird caught by a cat at a pond in Boxford, in June, 1897, now in possession of Mr. A. J. Severance, of Rowley, and another bird seen.⁵

88 [219] *Gallinula galeata* (Licht.).

FLORIDA GALLINULE.

Accidental visitor from the south; possibly very rare summer resident.

There are six records of this bird. Three specimens are in the collection

¹ Wm. Brewster: *Auk*, vol. 18, p. 321, 1901.

² F. W. Putnam: *Proc. Essex Inst.*, vol. 1, p. 224, 1856.

³ G. P. Whitman: *Amer. Nat.*, vol. 9, p. 573, 1875.

⁴ J. A. Farley: *Auk*, vol. 18, p. 398, 1901.

⁵ J. A. Farley: *Auk*, vol. 18, p. 190, 1901.

of the Peabody Academy, *viz.*, a female taken at Rowley, on October 14th, 1873, by G. P. Osgood; a specimen taken at Salem, October 25th, 1873, by George Stone; and a third labeled Essex County, October, 1900. There is also a specimen in the mounted collection of Mr. William Brewster that was killed in Boxford, late in the spring of 1884, and mounted by Welch, who thought the bird was breeding. The fifth specimen is in the collection of Mr. E. M. Haskell, of Ipswich, and was taken by him, in company with Mr. Welch, at Lynn, in October, 1881.

On September 20th, 1904, I saw in the Topsfield marshes, a bird started up from the reeds, that resembled an American Coot in plumage, but was considerably smaller. On October 1st, Mr. Julian M. Dodge succeeded in shooting what was probably the same bird and it proved to be a Florida Gallinule. Mr. Dodge kindly gave it to me and it is now in my collection.

89 [221] **Fulica americana** Gmel.

AMERICAN COOT; "MUD-HEN"; "POND CROW"; "BLUE PETER."

Transient visitor, rare in the spring, common in the autumn; March 31 to April 15; September 3 to November 7.

Mr. J. A. Farley tells me that old gunners claimed that this bird formerly bred in Georgetown. The American Coot is more common in small ponds and reedy marshes than in the large ponds, and is only rarely found in the salt marshes. It occurs singly and in small flocks of five or six. It is a powerful swimmer. It rides lightly the water, strikes out vigorously with the feet and at the same time nods the head and neck in a dove-like manner. Anon it stands up in the water and flaps its wings like a Duck, displaying in so doing the white tips of its secondaries. It picks daintily at the lily-pads and grasses, biting off the later, or plunges its head under water to feed. It is an active diver and often goes under water with very little effort; at other times it leaps clear of the water like a Grebe, with its wings pressed close to its sides, its body describing an arc, and the head entering as the feet leave the water. As its legs are so strong and muscular and its wings so comparatively feeble, it seems probable that like the Grebe it progresses under water by the use of the legs alone, but I have never observed it under water. In rising from the water it often has considerable difficulty and patters along the surface for some distance. Its call note is a loud cackle.

The chief field mark is the short, pointed, white bill which contrasts

strikingly with the dark blue plumage. In a rear view, two white patches on the lower tail coverts are displayed on either side of the upturned tail, and suggest the recognition marks on the rump of a prong-horn. These white patches are noticeable both as the bird swims and as it flies.

90 [222] *Crymophilus fulicarius* (Linn.).

RED PHALAROPE.

Rare and irregular transient visitor; May 15; August 31 to November 24.

The Phalaropes are all ocean wanderers, feeding and resting on the surface of the water.

On November 24th, 1901, in a fierce northeaster, I shot one of these birds as it was flying over the waves at Ipswich Beach. Two were taken at Magnolia, September 19th, and later, in 1869.¹ There are three specimens in the collection of the Peabody Academy, two of which were taken in September, 1886. Mr. W. A. Jeffries² took a specimen at Swampscott, on September 26th, 1890. There is a specimen taken at Lynn and another taken off Cape Ann, the latter on August 31st, 1879, in the collection of the Boston Society of Natural History. There is also one in the collection of Dr. F. H. Stockwell, of Ipswich, taken at that place.

The Phalarope's habit of flying over the water, pausing from time to time to sit and swim on the surface, makes its recognition easy. In the spring plumage the dull red breast serves to distinguish this species from the others. In the autumn, the breast is white but even in this plumage the bird is easily distinguished from the Northern Phalarope by its larger and stockier form and stouter bill.

91 [223] *Phalaropus lobatus* (Linn.).

NORTHERN PHALAROPE; "SEA GOOSE"; "WEB-FOOTED PEEP."

Irregular, but at times common transient visitor; May; August 10 to October 11.

¹ C. J. Maynard: Birds of Eastern North America, p. 188, 1884.

² W. A. Jeffries: Auk, vol. 8, p. 112, 1891.

This is the least rare of the Phalaropes, and it is a common bird along the northern coast of Maine. Mr. W. A. Jeffries¹ reports an unusual flight of them in 1890, after a strong but short northeast wind. A flock of 300 was found about a mile off the shore at Swampscott, from the 12th of August to the 26th of September. With them Mr. Jeffries found a single Red Phalarope. On September 2d, 1899, there occurred a remarkable night flight of Phalaropes probably of this species, previously referred to in the lighthouse records (see page 57) in which from 800 to 1000 killed themselves against Thatcher's Island Lights. On September 9th, 1904, between 12.30 and 4 A. M., a large flock was seen hovering about Thatcher's Island Lights and eight were killed. I had the opportunity of identifying one of these birds.

On October 11th, 1903, during a hard rain and northeast storm, a flock of ten or twelve flew by me on Ipswich Beach, three remaining to feed on the water at the mouth of the Essex River. I have two in my collection taken on the beach at Ipswich, on August 10th, 1901, by my brother. They were with two Semipalmated Sandpipers and were very unsuspicious. Mr. W. A. Jeffries shot one at a pond back of the beach at Swampscott on August 21st, 1876, and two others were taken in that vicinity the same year. On May 15th, 1904, in Martin's Brook, just outside the southern boundary of Andover, thirteen miles from the sea, Mr. Harold Bowditch found three of these birds. On October 6th, 1904, Dr. Phillips saw one alight at Wenham Lake among the wooden decoys.

The Northern, like the other Phalaropes, are usually found flying close over the sea, or riding gracefully on the waves, like miniature Ducks. These flocks present an interesting and curious appearance, the birds at times massing closely together. Their breasts are well protected by a thick coating of feathers at whose base is much down, but the true down feathers appear to be absent. It is very exceptional for them to alight on the beaches.

Their slight forms, small necks and heads, and needle-like bills, their dark backs, and in flying, the white line made by the ends of the greater coverts contrasting with their almost black wings, are all noticeable points.

92 [224] *Steganopus tricolor* Vieill.

WILSON'S PHALAROPE.

Accidental visitor from the west.

¹ W. A. Jeffries: Auk, vol. 8, p. 112, 1891.

This western bird is the rarest of the Phalaropes on our coast. I have only one record: a female taken in full spring plumage on May 20th, 1874, at Nahant, by Mr. G. O. Welch. It was "at the edge of a small brackish pool, every now and then springing up into the air, and . . . catching small dipterous insects."¹ The specimen is now in the collection of the Boston Society of Natural History, and is properly labeled a female, as is shown by plumage and measurements, although the record just quoted speaks of it as a male, an error probably due to the fact that the female Phalaropes are larger and brighter colored than the males.

93 [225] *Recurvirostra americana* Gmel.

AMERICAN AVOCET.

Accidental visitor from the west.

Three of these birds were shot near Eagle Hill by Mr. A. B. Clark, on September 13th, 1896.² One of these is in the collection of the Peabody Academy, another is also at Salem, and the third is in the collection of Mr. A. B. Clark, at Ipswich. Two were reported as being shot "years ago in Lynn marsh."³

There is only one other record for the State: a bird taken in Natick, on October 19th, 1880.⁴

94 [226] *Himantopus mexicanus* (Müll.).

BLACK-NECKED STILT.

Accidental visitor from the south.

The only authentic specimen of this bird from Essex County is one in the mounted collection of the Museum of Comparative Zoology, at Cambridge, labeled Lynn, and collected by N. Vickary. No date can be found. Mr. Maynard⁵ says, in the Naturalist's Guide, and this statement is quoted by J. A. Allen⁶ and

¹ S. F. Baird, T. M. Brewer, and R. Ridgway: Water Birds, vol. 1, p. 338, 1884.

² F. H. Kennard: Auk, vol. 14, p. 212, 1897.

³ Fletcher Osgood: Shooting and Fishing, vol. 9, p. 12, October 3, 1890.

⁴ H. A. Purdie: Bull. Nuttall Orn. Club, vol. 6, p. 123, 1881.

⁵ C. J. Maynard: The Naturalist's Guide, p. 143, 1870.

⁶ J. A. Allen: Amer. Nat., vol. 3, p. 638, 1870.

others, that this bird is "occasionally seen along the sandy beaches. Of this fact I am assured by gunners and others, who have noticed it on account of its peculiarities, and ironically named it 'Humility.'" This latter name is applied to the Willet by old gunners at Ipswich and elsewhere, and as Maynard¹ himself states, was so used at the time of his writing. As Mr. Maynard himself had not seen the bird, this evidence of its occurrence might, I think, be dropped.

95 [228] *Philohela minor* (Gmel.).

AMERICAN WOODCOCK.

Not uncommon summer resident, more common in the migrations; March 4 to November 1 (December 11).

Eggs: May.

The Woodcock is much persecuted and is diminishing in numbers. The young birds are "located" by gunners early in July and shot as soon as the law is off. A Woodcock was picked up emaciated but alive, in Lynn, on December 11th, 1902, by Mr. George Woodman.²

A Woodcock was killed by striking one of Thatcher's Island Lights on April 14th, 1893, and another on March 25th, 1901. Another was killed against Hospital Point Light, in the spring of 1888.

96 [230] *Gallinago delicata* (Ord).

WILSON'S SNIPE; "ENGLISH SNIPE"; "JACK SNIPE."

Common transient visitor, very rare summer resident; (winter); March 29 to May 1; (summer); September 11 to November 14 (December).

Nuttall³ says: "My friend, Mr. Ives of Salem, also informs me, that a few pairs of this species breed in that vicinity." This was in the early part of the last century. I believe that they may still breed here occasionally, for Mr. T. C. Wilson, tells me that in his experience of thirty years, he has occasionally

¹ C. J. Maynard: *The Naturalist's Guide*, p. 141, 1870.

² G. H. Mackay: *Auk*, vol. 20, p. 210, 1903.

³ Thomas Nuttall: *A Manual of the Ornithology of the United States and of Canada*, vol. 2, p. 187, 1834.

found, in early August, Snipe too young to migrate in the marshes of the Miles River, Hamilton. Mr. J. A. Farley tells me that a pair of birds, evidently breeding, was shot by a gunner in May, about the year 1895, at Lynnfield. Snipe occasionally stay into December, and there is one in the Peabody Academy collection that was taken by Dr. H. K. Oliver, in December, 1853.

The Wilson's Snipe is found during the migrations in the fresh-water meadows, or in the brackish edges of the salt marshes. I have never seen them in the salt marshes proper. They usually occur singly or two or three together. On October 11th, 1904, Dr. Phillips found twenty of these birds in a small marsh close to Wenham Lake. Their zig-zag erratic flight and sharply emitted *scaipes* are the first warnings that the man without a dog has of their presence since it is almost impossible to see them on the ground.

97 [231] **Macrorhamphus griseus** (Gmel.).

DOWITCHER; RED-BREASTED SNIPE; "ROBIN SNIPE"; "BROWN-BACK."

Not uncommon transient visitor, rare in spring; May 20 to June 7; July 6 to September 23.

The Dowitcher is an early autumnal migrant, being rarely seen after the third week in August, although sometimes found into September. My latest date is of a bird in my collection, shot at Newburyport on September 23d, 1904. In the spring they are rare, although the old gunners tell of large numbers being killed in the last week of May, twenty years or more ago.

Although they may sometimes occur on the beaches, I have never seen them there, but have found them in the mudholes or sloughs of the salt marshes, which they evidently prefer. They may be found singly or in small flocks that fly in compact form. They are very tame and unsuspicious, and are easily decoyed and shot, resembling the Lesser Yellow-legs in these respects. Their note also resembles that of the Lesser Yellow-legs when a single call is given, but they are apt to follow it with one or two others, low and querulous.

When feeding, their shorter legs, much darker and brown rather than pale gray backs distinguish them from the Summer Yellow-legs with which bird they are most apt to be confused. If the breast is seen, this of course distinguishes them at once. When the birds are flying, their rumps are seen to be much less white than those of the Yellow-legs.

98 [232] **Macrorhamphus scolopaceus** (Say).

LONG-BILLED DOWITCHER; WESTERN DOWITCHER.

Accidental visitor from the west.

The female of the preceding species (*M. griseus*) has a longer bill and is of larger size than the male and is therefore sometimes mistaken for this bird. There are two specimens of *scolopaceus* in the Peabody Academy collection, one, sex not given, taken by E. A. Smith, at Ipswich, in 1871, the other a female taken at Salem, on October 14th, 1876. Both of these were kindly identified by Mr. William Brewster. In both, the bills measured 2.85 inches. I have a young male in my collection with a bill 2.50 inches long, shot in the Newburyport marshes on September 20th, 1904.

99 [233] **Micropalama himantopus** (Bonap.).

STILT SANDPIPER; "BASTARD YELLOW-LEG."

Irregular, and at times not uncommon transient visitor; July 22 to September 16.

After collecting over a dozen records of this bird under the impression that it was a very rare or even accidental visitor, I have concluded that it should be put among the not uncommon migrants.

Dr. Brewer,¹ in 1878, collected a considerable number of records for the Stilt Sandpiper at Swampscott, Ipswich, and Salem, and he speaks of "a very remarkable flight of this bird, during which nearly two hundred individuals had been secured by members of the Phillips family." This was about the year 1860, at Swampscott.

R. L. Newcomb² says of this bird: "As with all birds, there may be years when they are without apparent cause scarcer than usual, yet about every season when shooting shore birds I have taken them. I know of eight shot at a single discharge at Eagle Hill, Ipswich."

In August, 1902, a flock of about 25 came in to one of the mud sloughs at Eagle Hill and nearly all were shot. They were very tame and many were shot

¹ T. M. Brewer: Proc. Boston Soc. Nat. Hist., vol. 19, p. 252, 1878.

² R. L. Newcomb: Forest and Stream, vol. 22, p. 483, 1884.

at the first discharge. Three were shot there in 1903, two of which are in my collection through the kindness of Mr. T. C. Wilson, and Mr. T. E. Marr.

I have never seen the bird alive, but Mr. Wilson describes its note as a shrill double and occasionally triple whistle. Its legs, long in proportion to its size, would easily distinguish it. The legs are greenish yellow and not bright yellow as they are in the Tattler.

100 [234] *Tringa canutus* Linn.

KNOT; "RED-BREASTED PLOVER"; "BLUE PLOVER"; "SILVER PLOVER";
"GRAY-BACK."

Common transient visitor; May 20 to June 4 (June 25); July 17 to November 8.

The Knot is essentially a beach bird, being rarely found in the marshes. They occur in small flocks of from two or three to a dozen, either by themselves or associated with other shore birds. They are generally quite tame, are easily approached, and come to the gunner's decoys well bunched so that they are easily shot. They are rather silent but occasionally emit a clear double whistle, soft and low, especially when approaching other birds.

The Knots seem to be particularly fond of small molluscs, for small periwinkles (*Litorina*) and mussels (*Mytilus edulis*) are almost always found in their stomachs. As they feed on the beach, they may be seen to search among the seaweed for these dainties. The Black-bellied Plover and the Knot are generally very good friends, and are often found feeding and migrating together.

The young, or "Blue Plovers," a very appropriate Ipswich name, arrive about a month after their elders, and are still more unsuspecting. On June 25th, 1903, in a long northeast storm, I found three of these birds, two males and one female, together with two Black-bellied Plover, feeding on the sandflats at Ipswich Beach. All were fat, one being especially so, and their stomachs contained small molluscs and a few sand fleas. The testicles of the two males were 0.35 and 0.25 of an inch long, respectively, and two of the ova of the female were 0.15 of an inch long, the rest very small. The plumage of one was that of a full adult; the other two, although quite red-breasted, were probably somewhat immature. That these birds were late migrants to the north, or early ones to the south, or birds that were spending the summer south of their breeding range, are all possibilities.

Flying and on the beach, the Knot is an inconspicuous bird, both in full

and in immature plumage. They are about the size of Turnstones, and like them are squat and stout. Their bills are, however, decidedly longer, and their legs greenish yellow instead of coral red. They lack distinct markings, the adult being brownish red on throat and breast and dark gray above, while the young are bluish gray above with white throat and belly and gray breast. In flight the rump in neither young nor old is conspicuous, although in the adult it is noticeably lighter than the back. In this respect they differ markedly from the Turnstones with their conspicuous white pattern of rump and back. The wings of the Knot show a faint white line. I have known the young to be mistaken for Purple Sandpipers, but the latter are smaller and darker both on breast and on back and show a conspicuous line on the wings.

101 [235] *Arquatella maritima* (Brünn.).

PURPLE SANDPIPER; "ROCK SNIPE"; "WINTER SNIPE."

Common winter visitor; (July 30); November 1 to April 19 (May 11).

It is possible that the Purple Sandpipers sometimes come from the north earlier than they are generally supposed to do. The July 30th record is of two birds of this species, shot in 1897, by Mr. A. H. Clark on some rocks off Beverly. In the spring they tarry till the middle of April or later. I shot one on Thatcher's Island on April 19th, 1904, a single bird. A still later date is from a specimen of this species I discovered, not named, in the Peabody Academy collection, dated May 11th, 1861, from the Haste Rocks, Salem Harbor, and taken by W. H. Silsbee. This bird, like my own specimen, is in beautiful spring plumage.

The Purple Sandpiper is devoted to rocky islands, and is only accidentally found anywhere else. It even avoids the rocky shores of the mainland. On November 10th, 1901, in a very strong northwest wind I found and shot one of this species on the upper part of the Ipswich Beach, where it was feeding among the wrack thrown up there. Although I have explored most of the rocky coast of Essex County many times in winter, I have never before this found the Purple Sandpiper on the mainland, and this is the only time I have found it away from rocks. On the rocky islands that are scattered all along the southern shore of the County from Egg Rock, off Nahant, to the Salvages, off Rockport, this bird is to be found. The largest number I ever saw together was on Straitsmouth Island, off the end of Cape Ann, on December 20th, 1903, and an interesting half hour was spent in watching them. A large flock of these

birds was wheeling and turning in sandpiper fashion near the island, showing first their dark backs, and then their white bellies. They finally alighted on a steeply sloping rock close to the water's edge on the northeastern point of the island so that they could be watched with binoculars and telescope from the shore. Fifty-eight birds were in sight and there were fully half as many more on the other side of the rock, hidden from view, except when they jumped up from time to time. The flock must have numbered seventy-five. The tide was high and the birds were evidently trying to kill time until low water, when they could gather their food from the seaweed-covered rocks. Most of them were resting, squatting on the rock with head to the wind, their dark purplish gray backs contrasting strongly with their white bellies. Others were slowly raising their wings over their backs, showing the white under surfaces. Again they were chasing each other, making the sleepy ones jump suddenly, or running up the rock to escape an unusually high wave, fluttering with their wings to help themselves. From time to time they were joined by bunches of from five to ten others.

On the smaller rocks, little flocks of three or four are frequently to be seen in winter. As they are not often molested, they are quite tame, and feed unconcernedly, close to the edge of the waves. Their food consists chiefly, as I have found from examinations of their stomachs, of small molluscs, especially the edible mussel (*Mytilus edulis*). As a consequence of this diet their flesh tastes coarse and fishy like that of the Scoters.

The season of the year and the rocky stations proclaim the identity of this bird. Their dark purple, almost black backs and upper breast contrast with their white bellies. These latter sometimes have a slight salmon tint. Their wings are white beneath, but seen from above look almost black with a white line, made by the tips of the secondary coverts, and a small white patch, made by the tips of the inner secondaries. The middle tail feathers show black, the outer light gray. The basal third of the bill is orange, shading out to black in the distal two thirds. The tarsi and feet are stout and of a light straw color.

102 [239] **Actodromas maculata** (Vieill.).

PECTORAL SANDPIPER; "GRASS-BIRD"; "BROWN-BACK."

Very rare spring, and abundant autumn transient visitor; July 15 to November 6.

I have no spring records of this bird. When the weather conditions are

favorable, large "flights" of the Grass-bird sometimes occur in the autumn, long hoped for by the gunners along the shore. Then the professional gunner sends telegrams to his clients, and the sportsmen hasten from the cities hoping to arrive before the flight has passed. A large flight of this sort took place early in October, 1899, when in a northeast wind hundreds of flocks of Grass-birds poured over the marshes at Ipswich in "bunches" of from five to one hundred for about three hours. These flights may occur once or twice in a season or not at all. Between the 10th and 20th of August, 1898, there was a considerable flight of these birds and again in late September, in 1904.

The Pectoral Sandpiper frequents the salt marshes and is particularly fond of the more elevated portions which are sometimes flooded with rain water. Here in the "black-grass," they scatter, and, rising singly, they often twist and turn somewhat like a Wilson's Snipe. They are not shy, but they generally pay but scant attention to decoys, perhaps swinging towards them only as they fly by. Their note is a characteristic one, easily recognized: a sharp grating *krick* or *errrik*, at times like a very shrill rolling whistle. In New Jersey they are called "Kriekers," which name, Trumbull¹ says "was not applied, as popularly believed, because of the bird's creaking note, but because of its crouching or squatting habit — German *Kriecher*, a cringing person."

Even on the wing, the difference in size of the two sexes is noticeable, for, unlike many other shore birds, the male is here the larger. This fact is noticed by the gunners, some of the older maintaining that there are two species.

As Hoffmann says,² they "look like a large edition of the Least Sandpiper." Their size, as well as their black rumps easily distinguish them from the much smaller White-rumped Sandpiper. Their brown backs are often difficult to see in the dry grass of the marshes. In mudholes or bare places one may see their straw-colored legs and base of the bill.

103 [240] *Actodromas fuscicollis* (Vieill.).

WHITE-RUMPED SANDPIPER; BONAPARTE'S SANDPIPER; "BULL-PEEP."

Rare spring and common autumn transient visitor; June 5; July 10 to November 10.

In the autumn, the White-rumped Sandpiper is a very early and a very late

¹ Gurdon Trumbull: Names and Portraits of Birds, p. 176, 1888.

² Ralph Hoffmann: A Guide to the Birds of New England and Eastern New York, p. 270, 1904.

migrant, but September and October are the months in which it is most commonly found. July 10th is the date on a specimen in the Peabody Academy collection, and November 10th records a bird taken at Newburyport, in 1904. On November 9th, 1878, one was taken at Swampscott by J. A. Jeffries. I have seen them only once in the spring: two on Ipswich Beach on June 5th, 1904. Nuttall¹ says: "Mr. Oakes met with this species in the vicinity of Ipswich." Oakes was the famous botanist.

On October 14th, 1904, Dr. Phillips found twenty-seven of these birds and one American Dunlin on the shores of Wenham Lake, and Mr. H. W. Wright in a letter to me, reports the large number of fifty seen at the protected Nahant Beach, on October 26th, 1904.

The White-rumped Sandpipers are found both on the beach and in the sloughs of the marsh, sometimes in flocks by themselves, but generally with other smaller Sandpipers. They are usually unsuspicious and their habits are very similar to those of their smaller companions. Their note is a sharp, short whistle, which I have written down *twoit* and also *ssight* and again *tsst*. It suggests at times the call note of the Pipit.

When on the beach, they appear only slightly larger than the Semipalmated Sandpipers, and, as their wings cover their white rumps, one has to look sharply to discover them in a flock of the latter birds. They are also slightly darker, and a fine point is that they are dark just in front of the bend of the wings, while *Ereunetes* is white there. When flying, however, they display their white rumps, while the Semipalmated Sandpipers have black rumps.

104 [241] *Actodromas bairdii* Coues.

BAIRD'S SANDPIPER; "BULL-PEEP."

A rare transient visitor; July 28 to October 1.

How many of these birds have been shot and eaten by gunners under the name of "Bull-peep" we shall never know, but I suspect that not a few have gone this way. A male was shot at Swampscott, on August 27th, 1876, by Mr. W. A. Jeffries.² Another specimen was taken at Marblehead on August 15th, 1881, by C. R. Lamb.³

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 2, p. 109, 1834.

² T. M. Brewer: Bull. Nuttall Orn. Club, vol. 3, p. 140, 1878.

³ A. P. Chadbourne: Quarterly Journ. Boston Zool. Soc., vol. 1, p. 37, 1882.

On August 27th, 1898, at Ipswich, my brother and I saw a single bird flying over the beach that looked like a large Peep. We both noticed its size and my brother brought it down. It proved to be a Baird's Sandpiper. Another specimen was shot among a flock of Peep, by Mr. T. S. Bradlee in a pond-hole of the marsh at Eagle Hill, on July 28th, 1902. The specimen is in his collection. On August 30th, 1904, Mr. C. W. Loud shot three immature birds of this species at the lagoon or stagnant pool just back of Ipswich Beach. Two of these are in my collection, the third is in that of Dr. A. L. Reagh, kindly presented to us by Mr. Loud. On September 15th, 1904, in a violent down-pour of rain, I found and secured a single bird of this species on Ipswich Beach. His note, which I heard several times, seemed to me exactly like that of the Semipalmated Sandpiper, a rather shrill trilling whistle. Still another record can be given for the Baird's Sandpiper, a specimen of which I found among some shore birds shot at Ipswich on October 1st, 1904, by Mr. J. H. Kimball.

The Baird's Sandpiper is only a little larger than the Semipalmated species, but can be distinguished from it in life by its darker breast. From the Bonaparte's Sandpiper, it is distinguished by its black instead of white rump, and from the Dunlin by its straight instead of curved bill.

105 [242] *Actodromas minutilla* (Vieill.).

LEAST SANDPIPER; "PEEP"; "MUD-PEEP."

Abundant transient visitor; May 5 to June 7; (summer); July 6 to September 13 (October 13).

This little bird is hardly gone in the spring before he reappears again. Indeed, there is but a scant month from June 7th to July 6th when he is away, and during this time two or three birds, supposedly immature or barren, may often be found. Can the bird have reached the arctic regions, laid the eggs, and reared the young in this time? One must suppose that the early migrants in the spring are the early ones to return in the fall, but this gives only two months for this important process. There are too many migrants early in July to put them down as mere stragglers or birds that have been spending the summer along the coast. Thus, on July 10th, 1904, I counted all the Peep that I saw from 5.30 to 11.30 A. M. in the marshes at Ipswich and they amounted to twenty-seven. Nearly all flew by me going south, singly and in small bunches up to twelve. In the autumn, they are generally all gone by the end of the first week in September, not tarrying so late as the Semipalmated Sandpiper. Occasion-

ally, however, a straggler may be found as late as October. Thus on October 13th, 1904, in an easterly storm, I started one in the marshes at Ipswich and made sure of its identity by shooting it.

The Least Sandpiper, although occasionally found on the beaches, frequents the marshes, singly or in flocks, often associated with other Sandpipers or with the Yellow-legs, among whom they run like pigmies among giants. In the mud-holes or sloughs in the marshes, they are so busy feeding that they can often be approached within a few feet, and I have known them to be killed by haymakers' throwing their rakes at them. I remember at Magnolia nearly catching in my hat a bird that was dozing in the marsh.

The note of this bird is a simple and trilling whistle easily imitated by the tin peep-whistle, which in the mouth of the gunner calls these birds to their doom. Their call resembles that of the Semipalmated Sandpiper, but is sweeter and more musical. When feeding, they may be heard gently peeping to each other like little chickens. In the spring I have frequently seen them fly over the marsh with wings quivering forcibly downwards, uttering constantly sweet tremulo calls, — the flight song of the species.

Their small size easily distinguishes them from all other Sandpipers except the Semipalmated. Both are known as "Peep," the latter from its preference for beaches being often called "Sand-peep" while the Least is called "Mud-peep." The semipalmation is of course a diagnostic mark, but this can be seen in life under the most favorable circumstances only. The greenish yellow tarsi and feet of the Least Sandpiper, which can be seen in a good light at some distance, at once distinguish it from the Semipalmated species with its black tarsi, or greenish black in the young. Occasionally a Sandpiper will scratch his head with his foot, thereby displaying the color of the tarsus to good advantage. The Least Sandpiper has the back of a richer brown hue, more like that of other marsh-loving birds, while the Semipalmated Sandpiper has a more sandy colored back. The latter bird is also slightly larger, a difference that is noticed only when the two are side by side. As a rule, the neck and breast are darker in the Least Sandpiper. A Semipalmated Sandpiper in a flock of Least Sandpipers on the marsh at once attracts the eye by these differences, and I have easily distinguished them at the distance of one hundred yards with the naked eye. As before remarked, there is a slight difference in their call notes.

106 [243a] *Pelidna alpina sakhalina* (Vieill.).

AMERICAN DUNLIN; RED-BACKED SANDPIPER; "BRANT-BIRD."

Rare spring and common autumn transient visitor; May 20 (June 18); September 1 to November 1.

I have only twice seen this bird in the spring, a single one each time: once in May, 1895, and again on May 20th, 1904. Mr. Maynard¹ found several at Ipswich on June 18th, 1868; they showed no signs of breeding and were, he thought, the young of the preceding year.

The American Dunlin is a late autumn migrant but after the middle of September it is, at times, fairly common in small flocks, chiefly on the sandy beaches, less often in the marshes. Dr. Phillips shot one among a flock of White-rumped Sandpipers at Wenham Lake, on October 14th, 1904. They are, as a rule, very unsuspicious and can be watched at close range. In feeding they frequently plunge the bill, slightly open, to its base in the soft sand or mud, appear to work it about, and when successful draw forth an amphipod or a worm. Several times on one occasion I saw one draw a worm to the water close at hand as if to wash it, before swallowing it. On another occasion a couple of Dunlins were so tame that it was possible to approach within five feet of them. They were diligently probing in the sandy mud, wading in water up to their bellies. At this depth it was necessary for them to immerse their heads entirely, and I could see them shut their eyes as they went under water. Whether the eyes were afterwards opened or not I am unable to say. When disturbed they flew but a short way, and if they happened to alight in water too deep for their legs, they swam readily as do all shore birds.

When disturbed, the Dunlin utters a short *kŭk*. Their call note is distinctive, and resembles somewhat the word *purrr*, by which name the European species is called. The note is plaintive and sometimes melodious, and recalls, without its harshness, the cry of the Common Tern.

The American Dunlin is about the size of a Sanderling and its long, slightly decurved bill is distinctive. In the spring, the black belly, streaked breast, and rich, chestnut-brown back make it a marked bird. In the autumn only a few of the chestnut feathers remain in the mouse-colored backs. The broad grayish band across the lower neck and breast is noticeable, and also in flight the white line on the wing.

¹ C. J. Maynard: *The Naturalist's Guide*, p. 140, 1870.

107 [244] *Erolia ferruginea* (Brünn.).

CURLEW SANDPIPER.

Accidental visitor from Europe.

Samuels¹ "found a single specimen in a bunch of Sandpipers shot on Cape Ann, in the autumn of 1865, for sale in the principal market in Boston." One was taken at Nahant Beach about 1869, and is "now [1879] in possession of the city of Lawrence."² There is a female in the collection of the Peabody Academy, at Salem, taken at Ipswich on October 2d, 1872, by R. L. Newcomb.³ This is probably the bird referred to by Dr. Brewer⁴ as having been shot at Ipswich. Howe and Allen give only three other records for the State.

108 [246] *Ereunetes pusillus* (Linn.).

SEMIPALMATED SANDPIPER; PEEP; "SAND-PEEP."

Abundant transient visitor; May 13 to June 14; (summer); July 10 to October 30.

The average date for the departure of this bird in the autumn is about September 20th, after which very few are seen, although stragglers may be found even to the last of October. My latest date, October 30th, is of a single immature bird I saw at Ipswich Beach on that date, in 1904, and Mr. Harold Bowditch saw four at Lynn Beach on October 23d. A few are not infrequently found in the short interval between their spring and fall migrations — non-breeding birds.

The Semipalmated Sandpiper, the most common of all the shore birds, is a frequenter of sandy beaches, although a few straggle into the sloughs in the marshes. On the beaches, singly and in small or large flocks, it manages, notwithstanding the persecution of the gunners, to glean an abundant living and grow fat. The adults are generally extremely wary and know full well the distance a gun can carry when its possessor is walking on the beach, but they are

¹ E. A. Samuels: Ornithology and Oology of New England, p. 444, 1867.

² Ruthven Deane: Bull. Nuttall Orn. Club, vol. 4, p. 124, 1879.

³ R. L. Newcomb: Forest and Stream, vol. 22, p. 483, 1884.

⁴ T. M. Brewer: Proc. Boston Soc. Nat. Hist., vol. 17, p. 446, 1875.

slain in numbers as they fly by the decoys to which they are easily attracted. Their chances are small indeed when the beaches are lined with concealed gunners and inviting decoys. After the middle of August, the young birds appear, and are at first very tame, but soon learn the deviltry of man. In 1877, I noted that these birds were in large flocks on Coffin's Beach, but so persecuted by gunners encamped there, that they could not be approached, while on the little beach at Magnolia they were generally quite tame. On the protected Lynn Beach, now a public reservation, the shore birds are learning that they are safe, and even the shyer ones are at times confiding.

Semipalmated Sandpipers are fascinating birds to watch, whether on the wing, when the flocks twist and turn with military precision like one bird, alternately displaying their white breasts and gray backs, or whether busily engaged in feeding on the beach. At such times they occasionally find their small round mouth much out of proportion to the stretch of the end of the bill, and many shakings of the head are needed to get a large morsel past the sticking-point. I have seen one try several times to swallow a large beach flea, and then actually fly off with it in his bill. Their sleep in the day time is taken in short snatches, standing or squatting for a few minutes at a time with bill concealed in the feathers of the back, not "under the wing" as in poems. They also stand on one leg, even when both legs are intact, for cripples are common. They seem to yawn by stretching lazily one wing over a leg. They also spread both wings above the back as do many other shore birds, and they flirt their tail nervously from side to side, perhaps shaking the head at the same time. When gleaning food in the shallow water, they sometimes immerse their heads completely.

Their call note is very much like that of the Least Sandpiper but is shriller and less musical. A harsh rasping note and a peeping note are sometimes heard. A low, rolling, gossipy note is often emitted when they approach other birds. This latter note is often imitated with success by gunners. In the spring, however, the bird is delightfully musical on occasions, and his flight song may be heard on the beach and among the bogs of the dunes. Rising on quivering wings to about thirty feet from the ground, the bird advances with rapid wing beats, curving the pinions strongly downward, pouring forth a succession of musical notes,—a continuous quavering trill,—and ending with a few very sweet notes that recall those of a Goldfinch. He then descends to the ground where one may be lucky enough, if near at hand, to hear a low musical *cluck* from the excited bird. This is, I suppose, the full love flight-song, and is not often heard in its entirety, but the first quavering trill is not uncommon, a single bird, or a member of a flock singing thus as he flies over. I have seen birds chasing one another on the beach with raised wings, emitting a few quavering notes, and have been reminded of a Long-billed Marsh Wren. I have also heard them emit at this time a sharp grasshopper-like sound.

The female Semipalmated Sandpiper has a distinctly longer bill than the male. The average of the bills of thirteen adult males measured by me is 0.73, and of ten adult females 0.81 of an inch. The young birds can be distinguished by their nearly white breasts washed with a smoky tint. The field marks which distinguish this bird from the Least Sandpiper are given under that species.

109 [247] *Ereunetes occidentalis* Lawr.

WESTERN SEMIPALMATED SANDPIPER.

Rare autumn transient visitor; August 29 to September 20.

How commonly this bird occurs, one cannot say, for in autumn plumage it can hardly be distinguished from the eastern species except by the bill which is longer, a difference so slight that the gunner never discriminates. Of three male birds measured by me, two taken at Magnolia and one at Ipswich, the bills measured 0.92, 1.05, and 0.95 inches, respectively. The last was a young bird of the year. In adult females the bill might reach 1.20 inches.

110 [248] *Calidris arenaria* (Linn.).

SANDERLING; "BEACH-BIRD"; "WHITEY"; "BEACH PLOVER."

Abundant transient visitor; May 20 to June 4; July 10 to November 19 (December 6).

The Sanderling is one of the latest shore birds to leave in the fall. I have several times found them in November, and once, in 1903, I found a single bird as late as December 6th. It is essentially a bird of the beaches, and keeps as close to the water's edge as possible, eagerly following in crowded ranks the receding wave and running nimbly before the advancing one, gleaning most diligently the abundant food to be found there and probing vigorously the sand. I have never seen it in the large marshes although occasionally single birds visit the sloughs at Eagle Hill. It is often very tame and unsuspicious, especially the young birds. Flocks will sometimes return to the gunner's decoys after each shot until all are slain.

Sanderlings are sometimes found in flocks of other shore birds, although usually they keep by themselves in flocks of from three or four up to thirty or more. They are rather silent, but generally emit a sharp *sight* or squeaking

whistle on approaching other birds or on coming in to decoys, among which they usually do not hesitate to alight. The young birds are more talkative than the adults. As an example of the former occasional abundance of this bird, the following quotation from a paper by R. L. Newcomb¹ is of interest: "Twelve years ago [*i. e.*, in 1872] I saw two baskets, each holding half a bushel and rounded full of these birds that Lewis Stone of Ipswich shot between tides, down Plum Island River. I have never seen them like that since." That they are still abundant is shown by the fact that on September 6th, 1903, I counted at close range a flock of eighty of these birds on Ipswich Beach, and although they are usually so active, one at least was very tired and sleepy. Standing at the edge of the water with his head turned backwards, the bill thrust down into the feathers of his back, he endeavored to sleep, but was frequently roused by his more wide-awake companions. Once he stood with his legs apart at an angle and rocking slightly, the picture of sleepiness.

In the spring migration, Sanderlings hurry through in the latter part of May. The plumage at this time is interesting, mainly because of the individual differences in time of moult. Thus on May 20th, 1904, I saw two on the beach at Ipswich, both in light winter plumage. On May 27th, out of a flock of thirty, eight had no rufous on the throat, two of these being in the snowy white winter plumage. Those with rufous on the throat had all degrees from a slight mottling to a general dark tinge. Unless the light is right, these rufous throats look black. On June 4th, of two on the beach, one had a pure white throat, the other the rufous throat of the full nuptial plumage. Such differences as these at this late date suggest that some at least of the birds do not attain full nuptial plumage the first year. In the autumn migration the birds are moulting into winter plumage. Early arrivals in July are sometimes very ruddy on the back, throat, and breast and all stages up to the pure white throat may be found at the same time. There are great individual differences and red throats may sometimes be found throughout August and even in September. Thus on August 4th, 1904, all stages were to be found on Ipswich Beach. Of two specimens preserved, both males, one had a full ruddy throat, ruddy and dark back, and the primaries unworn. The other had only a few ruddy feathers in the throat, numerous scattering pearl gray feathers in the back, and the primaries much worn. Others had nearly perfect winter plumage, with pearl gray backs and white throats.

After the middle of August, the young birds arrive. These are black and white on the back and pure white below with the exception of a faint smoky band on the upper breast. The jet black of the wings brings out the white line

¹ R. L. Newcomb: *Forest and Stream*, vol. 22, p. 484, 1884.

in strong relief. The adult winter plumage which is partly assumed before the birds leave, is characterized by an unspotted pearl gray back, as well as by the white throat.

On September 11th, 1903, Mr. F. H. Allen¹ found in a gunner's bag, at Ipswich Beach, a Sanderling with rudimentary hind toes. The bird was one of eleven shot in his presence, none of the others having this peculiarity. The hind toes are about 0.05 of an inch in length and have no claws. As Mr. Allen suggests, it is probably a case of reversion. Mr. Allen kindly gave the specimen to me and it is now in my collection.

Sanderlings are easily distinguished by their general grayness and by the white line on the wings at the junction of the remiges and the wing coverts. The red throats of the nuptial plumage look black except in a good light.

111 [249] *Limosa fedoa* (Linn.).

MARbled GODWIT; BROWN MARLIN.

Accidental transient visitor.

There is one specimen of this bird in the collection of the Peabody Academy, labeled female, 1868, Essex County. Maynard² records that H. B. Farley shot one at Ipswich, July 17th, 1869. Mr. T. C. Wilson tells me he shot one in the marsh near the mouth of the Ipswich River, about 1873, and although he follows the shooting most carefully every year, he has not seen or heard of one since. I am, however, through Mr. J. H. Hardy, Jr., able to give a recent record, namely, of one shot by Mr. S. J. P. Eaton at Newburyport, on September 5th, 1904. This bird is now in my collection.

112 [251] *Limosa hæmastica* (Linn.).

HUDSONIAN GODWIT; "BLACK-TAIL."

Rare autumn transient visitor; August 29 to October 22 (November 7).

I have not known of this Godwit being seen in the spring, at which season it follows, I believe, the Mississippi Valley route. It prefers the sloughs of the

¹ F. H. Allen: Auk, vol. 21, p. 79, 1904.

² C. J. Maynard: The Naturalist's Guide, p. 142, 1870.

marsh, but it is occasionally found on the beach, and it also alights with Curlew, on the hills. I have never been so fortunate as to find the bird, and my notes are derived from the observations of my brother and of Mr. T. C. Wilson. On September 18th, 1900, a flock of fifteen was seen at Eagle Hill and five were shot, and again, eight or ten were shot in the sloughs there out of one flock in September, 1902. Mr. T. S. Bradlee shot two there on September 3d, 1902. My brother, Mr. W. S. Townsend, shot an adult on the beach at Ipswich on August 29th, 1891, and a young bird on September 18th, 1900. Both are in my collection. My latest dates in the autumn are of a bird shot by my brother on October 22d, 1902, at Ipswich, and one shot at Newburyport, on November 7th, 1904. After the middle of September, mostly young birds are found.

Mr. Wilson describes the note as peculiar and easily recognized: a low double note, frequently emitted as the bird comes in to the decoys. The white rump contrasting with the dark tail and back is a conspicuous mark.

113 [254] **Totanus melanoleucus** (Gmel.).

GREATER YELLOW-LEGS; GREATER TATTLER; "WINTER YELLOW-LEGS"; "WINTER."

Common transient visitor; (March 27) April 19 to June 14 (June 28, July 6); July 20 to November 10.

A few birds, not breeding, occasionally spend the summer. In the spring migrations, the Greater Yellow-legs is rather more abundant than in the autumn.

This beautiful and interesting bird is rarely to be found on the beach, preferring the sloughs of the marsh or the muddy creeks, where it can catch small fish in the water and probe the soft mud with its long bill. Persistently sought by the gunner, eagerly responding to the easily imitated call, and offering on its approach to the decoys an extremely easy shot, the Greater Yellow-legs still remains common, although its numbers have been greatly reduced in the last twenty years. Like all shore birds, its numbers on the coast vary greatly in different years, owing not so much to the actual number of birds as to the direction of the flight, whether along the coast or farther out to sea. This, in turn, depends largely on the weather conditions. As an illustration of the immense numbers of birds that are sometimes killed, it may be stated that 463 Greater Yellow-legs were sent from Newburyport and vicinity on one day, October 11th, 1904, to a single stall in Boston Market.

In flying, the Greater Yellow-legs is a conspicuous object. Its long yellow legs are extended out behind, its long neck and bill in front, while its white rump

flashes out as the bird turns or flies away. The wings, dark and pointed, are curved downward with vigorous strokes, as the bird flies and scales alternately. In alighting, it first sets its wings, sails gracefully downward, drops its long legs, and as soon as it is firmly on the ground it frequently spreads and lifts its wings straight up over its back, then folds them carefully, and after "tetering," in which process it moves its whole body up and down on its legs as a fulcrum, it proceeds to go about the business of the day in feeding.

Occasionally, especially in the spring, whole flocks may be seen at rest, standing motionless and silent like decoys or squatting down, and all facing the wind. At times they wade or are blown out beyond their depth in the pools in which they are feeding, and then they swim readily. In the spring, they are common in the pools of fresh water among the dunes, and flocks of from twenty to forty may be observed there. At this season they are still very wary, not knowing perhaps, or wisely not trusting the spring law. The early arrivals in the autumn, old birds, are very wary and can rarely be stalked although they generally come in to decoys readily, while the young birds arriving after September 1st or late in August are often quite tame.

Both in the air and on the ground the Greater Yellow-legs loudly proclaims its identity by uttering its well known whistle, *when, when when when, when when when when*, and this may be heard in the marshes by night as well as by day. In the spring frequently, but occasionally in the fall, these birds utter a prolonged rolling call or rather a succession of quick calls, resembling at times that of the Flicker. I have counted 320 quick repetitions of this call given by a bird standing in a pool back of the beach. He then flew off still scolding, but soon changed to his ordinary *when when when*. I have also heard them on rare occasions while they were flying about in the spring, screaming *keárr, keárr*, very much like a Common Tern.

The Greater Yellow-legs is easily recognized by its characteristic call notes, by its manner of flight alternately scaling and curving its dark wings downward, by its long yellow legs, and by its conspicuous white rump.

114 [255] *Totanus flavipes* (Gmel.).

LESSER YELLOW-LEGS; "SUMMER YELLOW-LEGS"; "SUMMER."

Common autumn transient visitor, accidental in spring; April 30, May 3; July 10 to September 15 (October 11, October 30).

The Lesser Yellow-legs goes north by the Mississippi Valley route, and I

have but three records of its occurrence in Essex County in the spring. Two spring specimens are in the collection of the Peabody Academy, one taken by Dr. H. K. Oliver in the spring of 1853, the other a female taken at Ipswich by W. L. Winslow on May 3d, 1884. Mr. William Brewster has a specimen in his mounted collection taken at North Saugus, on April 30th, 1882. In the autumn it arrives earlier and leaves for the south earlier than its cousin the Winter Yellow-legs, being rarely seen after the middle of September. The October 11th date is of a bird shot by Mr. T. C. Wilson at Eagle Hill, in 1897, the October 30th, of a bird shot at Newburyport, in 1904. During August they are more common than the larger species.

In habits and manner of flying, the Lesser resembles the Greater Yellow-legs. Like the latter, it prefers the muddy pools and sloughs of the salt marsh, as well as the marsh itself, although on rare occasions I have seen it at the edge of the waves on the beach. By its note it is easily distinguished, however, giving only a single or a double *when* as it flies overhead or when disturbed, instead of the volley of three or four *whens* so characteristic of its greater cousin. The tone also is different, not so deep as in the larger species. It may, like the Greater Yellow-legs, occasionally emit a series of notes like a roll but this is given more quickly than that of the latter.

The Summer Yellow-legs is much less wary than the Greater Yellow-legs, and often returns again and again to the fatal spot after each discharge of the gun, till but few of the flock remain. The markings and general appearance are the same in the two birds, the "Summer" being only about two thirds the size of the "Winter."

115 [256] *Helodromas solitarius* (Wils.).

SOLITARY SANDPIPER.

Not uncommon transient visitor; May 2 to May 26; July 26 to October 14.

Unlike most other Sandpipers, the Solitary does not care for the salt water, never in my experience appearing on the beach itself, although I have found it on the edge of a pool on the upper beach. In the salt marsh it seeks the fresh-water sloughs on the upper edges. In fact it is more apt to be found in wet meadows or on the edges of pools or streams, sometimes miles from the sea, perhaps among trees and bushes, among which it flies and perches with ease. It generally lives up to its name, single birds alone being found during the migrations, although two or more are sometimes seen together.

From old association I always think of the Solitary as a larger edition of the Spotted Sandpiper which it resembles in several ways. Like the latter bird it teters, but in a different manner. The tetering is less free and elastic, the tail movement is less marked, but the head and neck are bobbed up and down vigorously. Its flight, too, is more even, lacking the nervous down-curving of the wings and frequent scaling of the Spotted cousin. It displays a beautiful tail, whose outer feathers are white, barred with black, the two middle feathers alone being dark. Its wings instead of showing a prominent white line are almost black throughout as seen from above. Its call note is sharper and louder.

116 [258] *Symphemia semipalmata* (Gmel.).

WILLET; "HUMILITY."

Uncommon transient visitor; May 30 (June 17); August 4 to September 11.

The June 17th record is of a pair of birds seen in the salt marsh at Ipswich by Dr. J. L. Goodale, in 1887, and suggests the possibility of breeding. I have generally seen two or three of these birds every autumn on Ipswich Beach, usually singly, although on one occasion I saw three together. They are often associated with the Black-bellied Plover. Sometimes they alight in the salt marshes.

Willetts are generally very wary like all large shore birds. Their flight is swift and direct. After alighting, they are apt slowly to extend their wings straight up over the back, displaying their markings to great advantage. They run nimbly along the beach. They have a loud call, usually written *pill-will-willet*, and a single note, loud and rasping, suggestive of a giant Catbird, is also frequently given.

The Willet is easily distinguished from all other large shore birds by the large amount of white in the wings, the greater part of the secondaries and the basal half of the primaries being white. This is plainly seen as they fly by or overhead, and especially when they raise the wings over the back before folding them. Their general plumage is also very light and their rump is a snowy white.

117 [260] *Pavoncella pugnax* (Linn.).

RUFF.

Accidental visitor from the Old World.

An adult female with active ovaries was taken in the Newburyport marshes on May 20th, 1871.¹

Howe and Allen² give only one other record for the State: a bird taken at Chatham, on September 12th, 1880.

118 [261] *Bartramia longicauda* (Bechst.).

BARTRAMIAN SANDPIPER; "UPLAND PLOVER"; "PASTURE PLOVER."

Very rare spring, not uncommon autumn transient visitor; (summer); April 3 to May 7 (July 2, July 9); July 16 to September 1.

My only spring records are April 3d, 1904, one seen by Mr. T. C. Wilson; April 12th, 1876, one reported by Newcomb³; May 7th, 1896, one in the collection of the Boston Society of Natural History, taken by N. Vickary at Ipswich. The bird formerly bred in Essex County and may have done so in recent years. According to Mr. Otis Ingalls, of Ipswich, two or three pairs used to breed some 35 or 40 years ago in a pasture on Crooked-lane Hill, in Hamilton. Mr. Ingalls is perfectly familiar with the bird, having shot many. Mr. T. C. Wilson tells me that a pair was killed in Ipswich on July 2d, some seven or eight years ago. I heard an Upland Plover fly over the hills near the beach at Ipswich, on July 9th, 1904, and Mr. Wilson had seen a bird of this species several times that summer. Confirming these observations, Mr. E. M. Haskell tells me that he has seen an Upland Plover about his farm at Ipswich during the summer of 1904 since July 1st. On July 7th, and for several days after, he saw three birds. They were very tame, and he went within twenty-five yards of one. This certainly suggests young or breeding birds and may explain the spring record for this same year. Only breeding adults and very young birds are tame, adults under other circumstances being always extremely wary.

¹ Wm. Brewster: Amer. Nat., vol. 6, p. 306, 1872.

² R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 38, 1901.

³ R. L. Newcomb: Forest and Stream, vol. 6, p. 417, 1876.

The Upland Plover is certainly the aristocrat of its class and the gunner marks the day on which he succeeds in shooting one of them. They are extremely shy, and generally manage to keep out of sight in the open pastures which they frequent. They are fast runners, and one is fortunate to see them on the ground. They are particularly fond of the high hills covered with open pastures close to the sea, and I have found them here when other hills apparently equally favorable a few miles back may be explored for them in vain. They occasionally alight in the upper parts of the salt marsh among the "black-grass," and I once saw one drop for a few moments onto the beach, but this was certainly very exceptional.

In alighting, they often stretch their wings straight up over the back, and then fold them carefully. Then they extend their heads cautiously above the grass, and look about them before beginning to feed. Notwithstanding their shyness of man, I have known them to show no alarm at the report of a gun.

Their call note is very characteristic and is frequently sounded as they fly over. I have also heard it in the night. It is a liquid bleating or bubbling note, sweet yet mournful and suggestive somewhat of a tree-toad rather than a bird. Hardly a day goes by during the first part of August when this call may not be heard from my house at Ipswich, and the birds seen with characteristic flickering flight. The flight is often at a great height and the call seems to come from the depths of the sky. Occasionally the call is harsher, as when the bird is suddenly disturbed. By these points, particularly the call notes, the bird can be recognized. Other points I have noted are the absence of a white line on the wings, dark rump, and barred whitish outer tail feathers.

119 [262] *Tryngites subruficollis* (Vieill.).

BUFF-BREASTED SANDPIPER; "HILL GRASS-BIRD."

Rare transient visitor; July 28 to September 10.

This is a bird of the interior of the continent, but a few stray to the eastern coast. Two or three are shot nearly every autumn at Ipswich. I have no spring records. There are three specimens in the collection of the Boston Society of Natural History, and four in that of the Peabody Academy, all from Ipswich. I have three specimens from that locality. Mr. W. A. Jeffries took two in Swampscott in August, 1876.

The Buff-breasted Sandpiper frequents the hills as its local name would imply, although it is said occasionally to visit the marsh and I have known of

two being shot, in 1904, near the stagnant pool back of the beach at Ipswich. Its note is said to be like that of a Pectoral Sandpiper but finer.

120 [263] *Actitis macularia* (Linn.).

SPOTTED SANDPIPER; "TETER-PEEP."

Common summer resident; April 20 to November 14.

Eggs: May 30 to July 4.

Not only on the seashore but also inland along the borders of ponds and rivers, the Spotted Sandpiper is a familiar bird. Its eggs are laid near the inland waters, or on the pebbles or sand back of the beaches. It is particularly fond of nesting on islands. I used to find the eggs at Kettle Island off Magnolia, in the late seventies, and Mr. W. A. Jeffries notes the finding of eleven nests with eggs and one with young at Tinker's Island, off Marblehead, on June 8th, 1878. Four nests were in the short grass on high land, "while the others were all found more or less far under the rocks, scattered over the grass or along the shore." Nuttall¹ speaks of their nesting at Egg Rock, off Nahant, "in the immediate vicinity of the noisy nurseries of the quailing Terns."

The young birds, while still covered with the natal down, run very fast and when hard pressed, take to the water and swim rapidly and easily.

On the beach, the Spotted Sandpiper rarely strays beyond the dry sand, often in the beach grass, where he hunts for insects and occasionally perches on an old root or piece of wreck. They are particularly fond of pebbly beaches. In the marsh they are common in mudholes, and along the muddy banks of creeks. They alight frequently on posts or on small boats at anchor. When perched, especially if observed, they appear to be embarrassed or nervous, and "teter," the whole body oscillating on the legs as a fulcrum, the head bowing down, the tail up, to be nervously jerked back again. In the spring, this tetering is exaggerated to an extreme extent, and is amusing to behold.

Their flight is characteristic, for with wings curved vigorously downward, they alternately scale and fly. When disturbed on the edge of a creek they fly in half circles before the intruder, scaling out over the water to return farther on to the bank.

Their whistle is a loud and easily recognized *wheet, wheet*.

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 2, p. 164, 1834.

By observing these points the bird cannot be mistaken. The conspicuous white line on the wings, and the dark tail feathers distinguish it from the Solitary Sandpiper.

121 [264] *Numenius longirostris* Wils.

LONG-BILLED CURLEW; "SICKLE-BILL"; "HEN CURLEW."

Very rare or accidental transient visitor.

Formerly, or before 1870, the Long-billed Curlew was not uncommon. Putnam¹ lists it as "rather rare"; Maynard² says: "Not uncommon during the migrations, but very shy; but few shot on this account." He tells me that he often used to see them, and hear their loud "scream." Mr. T. C. Wilson, for thirty years a professional gunner at Ipswich, tells me he has never seen the bird. There is a specimen in the Peabody Academy collection from Essex County, labeled 1855, S. Jillson. There is also a specimen in the Brookline High School collection, from Ipswich, taken on October 18th, 1884. This is the latest authentic record I have.

It is not uncommon for gunners or even ornithologists to imagine they have secured a "Sickle-bill," when they obtain an old female Hudsonian Curlew, for in the latter the bill is sometimes four inches long, or longer than that of the young male "Sickle-bill." A number of these I have traced and found the bird to be in all instances the Hudsonian Curlew.

The strong rufous coloration of the Long-billed Curlew, especially below and on the under surface of the wings, at once distinguishes it from the Hudsonian Curlew. I have been told that the bird looks in life as brown as some varieties of hens and hence the name "Hen Curlew."

122 [265] *Numenius hudsonicus* Lath.

HUDSONIAN CURLEW; "JACK CURLEW."

Rare spring, not uncommon autumn transient visitor; May 24 to May 30; July 6 to September 17.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 218, 1856.

² C. J. Maynard: The Naturalist's Guide, p. 142, 1870.

This bird is an apparent, but I am inclined to think, only an apparent, exception to the rule that the shore birds are all decreasing in numbers. Thus, in Holder's¹ list of the birds of Lynn, observed from 1844 to 1846, this bird is not mentioned, although the Long-billed and the Eskimo Curlew are both included. Putnam,² in his 1856 list for Essex County, gives the Long-billed as "rather rare" in August, the Eskimo as "rather rare," September to middle of October, and omits the Hudsonian entirely from the list. Maynard,³ whose observations at Ipswich extended from 1867 to 1872, states that this bird is "very rare on the migrations," while both the Long-billed and the Eskimo Curlew are described as not uncommon. Allen,⁴ in 1878, says the Long-billed Curlew is a "not very common spring and autumn visitant," and of the Eskimo Curlew he says: "Rather common spring and autumn migrant"; while he calls the Hudsonian Curlew a "rare spring and fall migrant."

It is possible that the Hudsonian Curlew suffered in former days by comparison with its more common relatives. These relatives are now, as far as the Essex County coast is concerned, birds of the past, accidental wanderers, and the Hudsonian Curlew appears in its true proportions as not uncommon.

The Hudsonian Curlew is an early migrant, usually appearing by the middle of July. In 1904, there was a flight as early as July 6th. Mr. T. C. Wilson reported some eight or ten flocks of from four to fifteen birds each, perhaps 75 birds in all, that flew by the sloughs at Eagle Hill, Ipswich. On the same day one was seen at Lynn Beach, by Mr. T. M. Bradlee. This was an unusually large as well as early flight.

This Curlew is found on the beach as well as in the sloughs of the salt marsh, singly or in small flocks. It is usually extremely shy, although the young birds, which begin to arrive by the middle of August, are at times quite tame. On the beach, their graceful forms and curved bills are displayed to best advantage. They walk and run rapidly, stand still, often with one foot several inches in front of the other, rest occasionally by squatting down, with the tarsi flat on the ground, or standing upon one leg, with the other out behind.

Their flight is at times very swift. When they fly low over the water which they generally do in single file, their flight is often slow and suggests that of a Heron. At such times the long curved bill continuing the slender head, can often be plainly seen. They often raise their wings slightly as they alight.

¹ J. B. Holder: Catalogue of Birds Noticed in the Vicinity of Lynn During the Years of 1844-'5-'6, 1846.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 218, 1856.

³ C. J. Maynard: The Naturalist's Guide, p. 142, 1870.

⁴ J. A. Allen: Bull. Essex Inst., vol. 10, p. 25, 1878.

Their note which is always given when startled from the beach, and often when veering off from a shooting blind is a loud, clear, distinctive whistle repeated five or six times or more in quick succession. It is sometimes very sharp and high-pitched, a cackling noise. I have also heard a clear, mournful, whistled *curlew*.

The Hudsonian Curlew may be recognized by its note, its large size, curved black bill, and by the dull brownish gray color of its body and wings, unrelieved by any noticeable markings. The stripes on the head can be seen under favorable circumstances only. The length of bill in this bird varies greatly, the males and especially the immature ones having short bills, while the adult females have much longer ones. A young male in my collection has a bill only 2.25 inches in length, while an adult female has a bill of 3.65 inches. As before remarked, the large females are frequently mistaken for Sickle-bills while the small ones, even in collections, are not infrequently called Eskimo Curlew. The average length of the latter's bill as given by Chapman, is 2.40 inches. An infallible distinction, however, is the plain fuscous coloration of the primaries in the Eskimo Curlew, while in the Hudsonian Curlew these feathers are barred.

123 [266] **Numenius borealis** (Forst.).

ESKIMO CURLEW ; "DOUGH-BIRD."

Transient visitor, accidental in the spring, very rare in the autumn ; August 24 to September 15.

The Eskimo Curlew, commonly known by old gunners as the famous "Dough-bird," is a bird of the past on this coast. Although it has always been rare in the spring, going north by the Mississippi Valley route, it was formerly, — that is before 1870, — common and at times abundant in the autumn. Then it would collect in large flocks on the hills after storms, and, being quite tame, was killed in large numbers. One such invasion of "Dough-birds," although in smaller numbers, I remember witnessing at Rye Beach, New Hampshire, in 1874.

The fatness and tameness of this bird have, however, not proved its ruin, but have taught it wisdom, for the Eskimo Curlew now keeps well off the shore in its autumn migration, flying south over the ocean from Nova Scotia. Only in unusual storms is it deflected from its course so as to touch our New England coast.

In the autumn of 1890, a flock of about twenty Eskimo Curlew visited

Eagle Hill and all but two or three were killed. On September 15th, 1893, Mr. Walter Faxon saw one on Ipswich Beach. On August 24th, 1901, one was shot at Eagle Hill. These are the only recent records I have.

124 [270] *Squatarola squatarola* (Linn.).

BLACK-BELLIED PLOVER; "BEETLE-HEAD"; "BLACK-HEART"; "BULL-HEAD";
"CHUCKLE-HEAD."

Common transient visitor; May 8 to June 7 (June 25, July 5); July 15 to November 10.

The Black-bellied Plover is the most interesting of all our shore birds, not only on account of its large size and its beautiful and varied plumage, but also from the sweetness and wildness of its call note.

It is fortunately still a common migrant, although but few remain in comparison with the hosts of former days. Nuttall,¹ writing in 1834, says: "About the middle of September in the marshes of Chelsea [next to Lynn], contiguous to the beach, they sometimes assemble at day break, in flocks of more than a thousand individuals together, and soon after disperse themselves in companies to feed on the shores, upon small shell-fish and marine insects."

The Black-bellied Plovers are chiefly birds of the beach, although they are sometimes seen at mudholes in the marsh. At high tides they are found on the upper beach on the edge of the sand dunes or in upland pastures. The adults are extremely shy and can rarely be stalked on the beach, although at times they come in well to the decoys, if the sportsman is thoroughly concealed and motionless. The young birds, especially the early arrivals, are more easily approached.

Black-bellied Plover are generally found in flocks of from two or three up to fifteen or twenty, and I have on rare occasions seen as many as forty together at Ipswich Beach. They fly in scattered flocks, but occasionally in a long line abreast. In alighting, they set their wings and scale down to the sand, raising the wings quickly before folding them. They then separate in plover fashion and spread out over the sands holding their heads high, dabbling quickly at their food, and throwing the feet well out in front as they run. Their usual stride is three or four inches, but I have several times measured tracks that were six inches apart. On the other hand they may walk very leisurely, dragging the

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 2, p. 28, 1834.

middle toe like a Crow. I have only once or twice seen them jerk or bob nervously, but have watched many times for this habit without finding it.

Their call consists of two notes of singular sweetness and wildness. It has a plaintive quality and fits well the lonely beach with its resounding breakers. At times, when approaching their fellows, they emit a low single or conversational note, frequently repeated.

On June 25th, 1903, during a prolonged northeast storm, I found two of these birds on the beach with three Knots. One of the Plover was in mottled black and white plumage; the other, in splendid, full black plumage, I secured. It was a male with testicles 0.20 of an inch long, quite fat and with nothing in its stomach but a small amphipod crustacean. The plumage was only slightly worn with the exception of the primaries of the left wing, the first three of which had lost from an inch to an inch and a quarter, not enough to interfere with the flight. It occurred to me that this might be accounted for by the scraping of this wing on the ground while the bird was strutting for the admiration of the female, and that he with his companions had been caught in the storm and driven south. I have never noticed this condition of the primaries in other Plover and suppose that in this case these primaries had not been moulted for some time owing to some disease. It not infrequently happens that an occasional bird spends the summer, however. Between the full adult nuptial plumage and the winter plumage there are all degrees to be found, both in the spring and in the early autumn flight. From the various stages of plumages seen in the spring, it is evident either that there are great variations in the time of moult in different individuals, or that the full black-breasted plumage is not attained the first year. Some actual counts from my notes may be of interest here:

May 15th, 1904, six *S. squatarola* on the beach at Ipswich; only one in full nuptial plumage, two nearly "pale-belly," the rest with more or less black feathers in their breasts, these appearing first on the lower breast.

May 20th, 1904, seven, only one in full plumage, the rest showing all degrees down to the "pale-belly."

May 27th, 1904, flock of 25; eight are in full black and white plumage, the rest show all degrees of blackness on the breast, except four or five that appear devoid of black feathers.

I have shot specimens in the spring that appeared nearly white on the breast, but on close inspection showed scattered black feathers. In the autumn, the adults precede, but as July and August pass on, the number of black breasts constantly diminishes and the number of birds with an augmenting amount of white and fewer black feathers increases as the moulting to the "pale-belly" winter plumage proceeds. Many of these latter ragged birds are found even among the early arrivals in July. They may be the very early and vigorous

moulters, but when one sees ragged birds both in the last of May and early in July one is inclined to think that at least some birds do not attain the full nuptial plumage the first year. It is rare to see a full black-breasted bird after the middle of August.

The young birds with their backs spotted with yellow, their breasts streaked with gray, begin to come about September 3d, but older birds are frequently found in these flocks.

The black breasts of the full adults are very noticeable, contrasting beautifully with the white of the sides of the neck. In flight, the white bands on the wings at the junction of the remiges and greater coverts, and the white rumps or rather upper tail coverts are conspicuous marks in both old and young birds and at once distinguish them from the Golden Plover. In the latter bird, the white band over the eye contrasting with the black crown is diagnostic, the Black-bellied Plover having a light crown. Another diagnostic mark is the color of the axillaries which are black in the Black-bellied Plover and show very conspicuously as the bird starts to fly, or when it is slowly folding the wings on alighting. The black axillaries contrast sharply with the white of the inner surface of the wings. In the Golden Plover, the axillaries are ashy. Another distinctive point is the presence of a small, knob-like hind toe in the Black-bellied Plover, while the Golden Plover has no hind toe. One would hardly believe it possible to see this hind toe in the living Black-bellied Plover but such is the case. Both Mr. Hoffmann and myself, studying a couple of immature birds on the beach at Ipswich, plainly saw the hind toes with binoculars at a distance of forty yards, and with my telescope I had made them out at nearly twice this distance.

In the immature plumage, the two species closely resemble each other as they walk on the sands, but the Golden is smaller and darker. In flight, the white rump and white band on the wings at once distinguishes the larger bird. The color of the axillaries and the presence or absence of a hind toe as already explained, should be borne in mind.

125 [272] *Charadrius dominicus* Müll.

AMERICAN GOLDEN PLOVER, "PALE-BELLV"; "GREEN-BACK"; "GREEN PLOVER."

Accidental spring, rare autumn transient visitor; August 23 to November 2.

I have no certain spring record of this bird, which goes north by the

Mississippi Valley route. I record, however, the statement made to me by Mr. T. C. Wilson, who told me in June, 1903, that he had never seen the bird in the spring until that year, but that between May 15th and 20th, 1903, he with two other gunners saw several times at Ipswich a flock of about twenty Golden Plover with as many Black-bellied Plover.

As to the autumn migration, I cannot do better than quote Mackay¹ who says: "Of late years it has become evident that they have no intention of stopping on the New England coast after leaving Nova Scotia, as their course is considerably outside of it (two hundred miles or more). Their presence here, therefore, is purely the result of tempestuous weather."

Putnam,² writing in 1856, notes the Golden Plover as "abundant." Maynard³ in the late sixties calls it "common."

I have always found them rare even in the late seventies. Mr. T. C. Wilson tells me he sees from two or three to a dozen nearly every year and, in 1900, he saw thirty or forty. In one of his old record books, I find that, in 1889, he sold 23 of these birds that he had shot at Ipswich. In 1903, I saw three Golden Plover on Ipswich Beach. In 1904, three or four were killed there.

The Golden Plovers generally prefer the upper or dry part of the beach, although they may rarely descend to the wet sands. They also visit the hills, and more rarely the marshes.

They differ from the Black-bellied Plover in that they bob frequently, and this is a good diagnostic mark. Their call note differs, too, in being more of a roll, — a *chuckle* as I have heard gunners express it. Mackay speaks of it as a *coodle*. They also have a cheerful whistle.

Their field marks and differential diagnosis from the Black-bellied Plover have already been given under that bird.

126 [273] *Oxyechus vociferus* (Linn.).

KILLDEER.

Very rare transient visitor (winter); March 13 to May 16; July 13 to December 15 (winter).

On one memorable occasion, the Killdeer occurred along the New England

¹ G. H. Mackay: Auk, vol. 8, p. 18, 1891.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 216, 1856.

³ C. J. Maynard: The Naturalist's Guide, p. 138, 1870.

coast in great numbers from Nantucket to Cape Sable, being blown, it was believed, from the South Atlantic coast, north of Florida. A flock of 25 was seen at Essex, about November 29th, 1888, and they were common on Cape Ann from November 26th until December 15th, being seen there according to Chadbourne¹ as late as January 18th, 1889. Bates² speaks of their being killed on the south shore by the hundred. At Marblehead, a few remained all winter, seven being observed there by Bradford Torrey³ until March 7th.

Other years that I have records of single birds being seen or taken are : 1872, 1885, 1899, 1900, 1902, and 1903. In former years the Killdeer undoubtedly bred in Essex County.

127 [274] *Ægialitis semipalmata* Bonap.

SEMIPALMATED PLOVER ; RING-NECK.

Abundant transient visitor in the autumn, not common in the spring ; May 7 to June 14 (June 26) ; July 16 to October 26.

The Semipalmated Plover or Ring-neck as it is universally called, is one of the abundant birds of the beach in flocks of from two or three up to forty or fifty. They are found alone or associated with Peep or other shore birds. They also visit the sloughs of the salt marshes, and are occasionally seen still farther inland. Thus Dr. Phillips records one at Wenham Lake on September 12th, 1904.

The flocks on the wing, although sometimes compact, are apt to fly in loose order. On the sand, the birds at once spread out, not keeping together like Sandpipers, so that the pot-hunter spends many anxious moments waiting for a good combination, and often to his chagrin misses them all as the frightened birds take wing. Unlike the Sandpipers also, but in true plover fashion, instead of moving along close to the wave line with heads down, diligently probing the sand, they run rapidly about in different directions with heads up, often pausing and standing still as if in thought, occasionally jerking or bobbing their heads and necks nervously, and ever and anon dabbling quickly at some morsel of food.

Like all shore birds, the Ring-neck often snatches moments of sleep in the day, especially during high tide when their best feeding places are covered. At these times it is not uncommon to see whole flocks huddled together fast asleep

¹ A. P. Chadbourne : Auk, vol. 6, p. 255, 1889.

² F. A. Bates : Ornithologist and Oologist, vol. 13, p. 191, 1888.

³ Bradford Torrey : Auk, vol. 6, p. 274, 1889.

on the upper part of the beach, their heads turned to one side and thrust into the feathers of the back. There are always a few birds awake and on the lookout, and by close watching one may see even those apparently asleep, open their eyes occasionally. Ring-necks also sleep with heads sunk down between the shoulders. Their sleepiness in the day is accounted for by the fact that they feed and migrate by night as well as by day (see pages 28 and 56).

Like all shore birds also, the Ring-neck is often exceedingly fat in the autumn and I have known the fat of the breast to split open when the bird struck the ground after being shot when flying at a height. The fat is not only everywhere under the skin but it envelops all the viscera, and the liver is often pale from fatty infiltration. How birds under these circumstances are able to fly so vigorously on their long migrations, or even to fly at all is certainly a mystery.

The call of the Ring-neck is a clear, rather plaintive whistle of two notes,—very distinctive. When calling to others as they alight, or when standing on the sand, they often emit a single note, at times clear and sweet, at times harsh and rasping.

Ring-necks are noticeably larger than Semipalmated Sandpipers, their frequent associates. In flying, they show a faint white line on the wing which contrasts with their brownish wings and backs. Their neck-ring is noticeable both when the bird is flying and when it is walking, and the orange yellow of their legs and base of the bill may be seen on close scrutiny. In the young, which arrive about August 17th, this yellow color is paler and rather dirty, and the ring is gray instead of glossy black as in the adult.

128 [277] *Ægialitis meloda* (Ord).

PIPING PLOVER.

Rare summer resident, not uncommon transient visitor; April 24 to September 18.

Eggs: May 20.

As a summer resident this bird is certainly less common than it was twenty-five years ago, but its numbers as a migrant appear to me unchanged; it has never been common in my experience. Putnam,¹ in his 1856 list, calls it rare.

With the exception of the Spotted Sandpiper, this is the only shore bird

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 216, 1856.

that regularly breeds in Essex County. It lays its eggs, three or four in number, in a depression in the sand among the dunes, the abundance of tracks in the neighborhood leading the searcher to the desired spot. The bird adopts the usual tactics to entice the intruder from the nest, running about in a distracted manner as if the wings were broken. Selous¹ describes a similar action on the part of the English Snipe.

During the migrations, the Piping Plover is a bird of the beach, and is found singly or in flocks of from three to six, generally with other shore birds, especially the Semipalmated Plover. The latter bird it resembles closely in habits, although it shows a greater preference for the dry sand than does that Plover. The note of the Piping Plover is a sweet and mournful whistle, — the call of a dying race, — in comparison with which the whistle of the Semipalmated Plover is cheerful and business-like. The note is double and also at times single.

The Piping Plover is of the same size as the Semipalmated species but is easily distinguished from that bird by its incomplete neck-ring, and its much paler colors. In fact it appears like a faded ghost of the Semipalmated Plover. Mr. Hoffmann² well expresses it when he says that the Semipalmated Plover is the color of the wet sand, the Piping Plover the color of the dry sand.

129 [277a] *Ægialitis meloda circumcincta* Ridgw.

BELTED PIPING PLOVER.

Accidental transient visitor from the west.

In the mounted collection of the Boston Society of Natural History there is a male bird, taken at Lynn, having a complete ring, and a female with a ring nearly complete. As no dates are given, both of these may be spring specimens, and might be considered unusually full-plumaged specimens of *meloda*. There is, however, in the collection of the Peabody Academy, an autumn specimen, a male, taken at Ipswich on August 18th, in which the ring is fairly complete. On August 4th, 1903, in a flock of Semipalmated Plover and six Piping Plover, I observed carefully with a glass one of the latter that had a complete ring. I unfortunately failed to secure him. On August 26th, 1904, Mr. T. M. Wardley shot on Coffin's Beach and kindly gave to me, a Piping Plover with a complete

¹ Edmund Selous: Bird Watching, p. 60, 1901.

² Ralph Hoffmann: A Guide to the Birds of New England and Eastern New York, p. 255, 1904.

neck-ring that certainly deserves to be referred to *circumcincta*. It is to be noted that Dr. Sharpe¹ declines to recognize *circumcincta* as subspecifically distinct from *meloda*.

130 [280] *Ochthodromus wilsonius* (Ord).

WILSON'S PLOVER.

Accidental visitor from the south.

On May 8th, 1904, I was so fortunate as to find this bird in a gunner's bag at Ipswich. It had been shot early in the morning on the beach, whither it had apparently wandered, borne along perhaps by other migrants. Although Winter Yellow-legs were common on the marshes and a few Least Sandpipers and Piping Plover had arrived, the only other birds I had found on the beach that morning were three Black-bellied Plover and one Semipalmated Plover. The latter bird was seen at close range and his characteristic call note heard, which is very different from that of the Wilson's Plover. The note of the latter is described by Coues as "half a whistle, half a chirp." The Wilson's Plover was an adult male in full, somewhat worn plumage and very fat. The specimen is now in my collection.

Peabody,² in his report on the birds of Massachusetts, states that this species was abundant at Nahant in August, 1838, and this statement is copied by Putnam.³ This record was believed to be on the authority of Dr. Brewer who later refuted the statement. Thus in reviewing Allen's list of birds of Massachusetts, Dr. Brewer says as regards the probable occurrence of this bird: "Yet the occurrence of *Ægialitis wilsonia* in Massachusetts is another, in the writer's opinion, not to be anticipated."⁴

There is only one other record besides mine for the State: a bird taken at Gernet Point, Plymouth, on August 22d, 1877, by Mr. A. S. Fiske.⁵

¹ R. E. Sharpe: Catalogue of Birds of the British Museum, vol. 24, p. 294, 1896.

² W. B. O. Peabody: Report on the Ornithology of Massachusetts, p. 360, 1839.

³ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 224, 1856.

⁴ T. M. Brewer: Bull. Nuttall Orn. Club, vol. 3, p. 139, 1878.

⁵ Elliott Coues: Bull. Nuttall Orn. Club, vol. 7, p. 59, 1882.

131 [283.1] *Arenaria morinella* (Linn.).

RUDDY TURNSTONE; "CHICKEN PLOVER"; "CHICKEN"; "CALICO-BIRD."

Common transient visitor; May 10 to May 31; July 25 to October 16.

Essentially a bird of the shore, the Turnstone is found with other waders, singly or in small flocks on the sandy or stony beaches, as well as on the rocky shores, and it occasionally visits the sloughs of the marshes. Turnstones readily come in to decoys, and, if the gun is left behind, can sometimes be closely approached on the open beaches. In habits of walking they are between the Plover and the Sandpipers, not holding the head as erect as the Plover, and not so continually with bill to the ground as the Sandpipers. They differ from both, however, in the habit, from which they get their name, of turning over with their bills, stones, sticks, and seaweed in their search for food. They sometimes push against a mass of seaweed nearly as large as themselves, and roll it over, rooting like pigs. So vigorous are they in this, that bits of seaweed are often tossed into the air. Like little pigs, also, they grow very fat. I have found them once in September "rooting" in the great masses of Irish moss thrown up on Milk Island, off the end of Cape Ann. This seaweed was swarming with amphipod crustaceans on which the Turnstones were feeding. I shot two of the birds but found them great balls of fat, which made them excellent for the table, but valueless as specimens.

Like other shore birds, Turnstones delight in bathing at the edge of the waves, shaking themselves vigorously after the bath, and spreading their wings up over their backs. They sleep with the bill in the feathers of the back, occasionally squatting on the sand. Even when not feeding they are in the habit of standing in and near the seaweed thrown up on the beach. The brown of their backs matches so closely the color of the kelp that it is often difficult to distinguish them. Turnstones have a variety of call notes: a clear whistle of two or three notes, deep and melodious; also a hoarse rasping note or rattle, and a loud, rapidly repeated, short *kŭk kŭk kŭk*. I have heard them utter the latter in answer to other shore birds who were calling as they flew by, and I have heard it at night on the beach, answered by the calls of the Ring-neck.

The adults are a beautiful sight with their rich chestnut and black backs, their white heads, spotted and marked with black, their black upper breasts, contrasting with the white lower breast and belly, and their short, coral-red legs. No white is visible on their backs as they stand or run on the beach. In flight, however, they display three characteristic longitudinal streaks on their backs

the two outer ones separated from the middle by the long scapulars, and the middle streak interrupted by a patch of black at the base of the tail. The young birds which arrive during the last of August, are a faded-out copy of their parents, lacking all their brilliant colors and contrasts.

Since this was written I received the Journal of the Maine Ornithological Society for July, 1904, and find that Mr. F. T. Noble uses the same expression "rooting" in describing the feeding habits of this bird. We were both struck by the fact that the bird's method of searching for food is similar to that of the pig!

132 [289] **Colinus virginianus** (Linn.).

BOB-WHITE; "QUAIL."

Common resident.

Eggs: May to September.

The severe winter of 1903-4 practically exterminated the "Quail" in Essex County. The last I saw that winter were two huddled behind a bush against the wintry blasts on January 3d, 1904, about two miles from the sea, at Ipswich. Storm followed storm, the snow was piled to a great depth, and the mean temperature was lower than for any winter for over half a century. In such weather, poor Bob-white has a hard time. Many were starved, others frozen, others buried in the snow, or, to put it more exactly, all three fates were generally meted out to all. In the next spring, instead of hearing their cheerful calls everywhere in the fields, their voices were silent, and not until July did I find any near my house.

Sportsmen throughout the County, recognizing the damage that had been done, made haste to import birds from the south to take their place, and it is to be hoped that Bob-white will soon re-establish himself.

133 [298] **Canachites canadensis canace** (Linn.).

CANADIAN SPRUCE GROUSE; "SPRUCE PARTRIDGE."

Accidental visitor from the north.

One was found in the hemlock woods of Gloucester, by S. Jillson, in September, 1851.¹

There is only one other record from the State according to Howe and Allen²: a bird shot in Roxbury, in November, a few years prior to 1869.

134 [300] *Bonasa umbellus* (Linn.).

RUFFED GROUSE; "PARTRIDGE."

Common permanent resident.

Eggs: May 7 to June 2.

Although birds with gray tails are common, the Ruffed Grouse of this County are perhaps more nearly *umbellus* than *togata*. This is a point, however, where a study of a large number of specimens would be needed and I shall leave the question unsettled. Mr. Dearborn,³ speaking of Durham, just over the line, in New Hampshire, says: "This region is the border land between the habitat of the Canadian form (*Bonasa umbellus togata*) and that of *umbellus* proper, and the majority of birds can hardly be said to be either the one form or the other. As a rule, however, the gray Canadian form predominates." Dr. G. M. Allen⁴ says: "Typical examples of *B. umbellus umbellus* apparently do not occur in New Hampshire. Birds from the southeastern portions of the state are usually more or less intermediate, but nearer *togata*."

135 [301] *Lagopus lagopus* (Linn.).

WILLOW PTARMIGAN.

Accidental visitor from the north.

There is only one record for the County, the only one also for the State, namely, a bird shot at Manchester on May 10th, 1859, and now in the Essex County collection of the Peabody Academy. It is entered in the catalogue with the remark: "Supposed to be an escaped bird brought from Labrador," and Dr.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 224, 1856.

² R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 15, 1901.

³ Ned Dearborn: The Birds of Durham and Vicinity, p. 40, 1903.

⁴ G. M. Allen: Proc. Manchester Inst. Arts and Sci., vol. 4, p. 93, 1903 [= 1904].

Coues¹ in speaking of the bird, adds the words, "or Newfoundland." Mr. William Brewster² comments on this as follows: "No one now connected with the Academy is aware that this supposition rests on any substantial grounds, and it was perhaps based wholly on the seeming improbability that a Ptarmigan would wander so far south of its usual range. If this be true the long-accepted doubt has been given undue weight. In any case the Manchester bird must have come from somewhere on the mainland of North America, for it is a perfectly typical *Lagopus lagopus*, a form not known to occur on Newfoundland, where it is replaced by the closely allied but easily distinguished *L. l. alleni*." Mr. Brewster tells me that it is common for these Ptarmigans to take long flights of many miles. It therefore seems probable that the Willow Ptarmigan deserves a place in the regular list and not in the list of introduced species where it is placed by Howe and Allen.

[306] *Tympanuchus cupido* (Linn.). HEATH HEN; "PHEASANT." Nuttall³ speaks of its being common on the "ancient bushy site of the city of Boston," so that it was probably found by the first settlers in the woods of Essex County only some seven miles or more to the north.

[310a] *Meleagris gallopavo silvestris* (Vieill.). WILD TURKEY. A common bird in the early days, but altogether too good on the spit to last long (see page 64).

136 [315] *Ectopistes migratorius* (Linn.).

PASSENGER PIGEON; "WILD PIGEON."

Formerly abundant summer resident, now accidental or extirpated.

This bird is considered at some length in the chapter on Ornithological History (see page 65). Late records of this bird being *seen* are always open to doubt for it is very easy to mistake the Mourning Dove for it.

The latest records of birds shot that I can give for the County are my own, two of which are of specimens in my collection. One of these I shot at Magnolia, on September 4th, 1877, in some pine woods. It was a female, young of the year, and Mr. Brewster, to whom I showed it at the time, said it was "remarkably small." The other specimen, I shot at Magnolia in a pine tree in a grove near the ocean, on July 1st, 1878. This was an adult male. I

¹ Elliott Coues: Proc. Essex Inst., vol. 5, p. 289, 1868.

² Wm. Brewster, ed.: Minot's Land-birds and Game-birds of New England, p. 403, 1895.

³ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 662, 1832.

also shot one in Magnolia, on September 19th, 1877, a female, which has not been preserved. Their stomachs all contained wild-rose hips. I remember seeing a small flock of five or six in the Essex Woods at this time.

Mr. J. H. Sears, of Salem, tells me that on August 17th, 1904, he watched and followed for nearly a mile at Kent's Island, Newburyport, a pair of Pigeons, which he fully identified as of this species, feeling sure that they were not Mourning Doves. He stood directly under them at one time, as they were perched in the trees.

137 [316] *Zenaidura macroura* (Linn.).

MOURNING DOVE.

Rare summer resident ; May 7 to September 10.

These dates are imperfect, for Mr. Dearborn¹ in his list of the birds of Durham, N. H., just north of Essex County, gives April to December 15th as his limits for the Mourning Dove.

138 [325] *Cathartes aura* (Linn.).

TURKEY VULTURE.

Accidental visitor from the south.

There are three records of this bird for the County, and eight or ten others for the State.

One in young plumage was taken at Annisquam² on September 14th, 1886, another at Essex³ on November 16th, 1889, and there is a specimen in the Peabody Academy collection taken at Essex by Mr. W. G. Bannister, in 1896.

¹ Ned Dearborn : The Birds of Durham and Vicinity, p. 42, 1903.

² H. G. White : Ornithologist and Oologist, vol. 11, p. 157, 1886.

³ Wm. Brewster : Auk, vol. 7, p. 204, 1890.

139 [326] *Catharista urubu* (Vieill.).

BLACK VULTURE.

Accidental visitor from the south.

A Black Vulture was shot at Swampscott in November, 1850, according to S. Jillson.¹ Another was shot at Gloucester on September 28th, 1863, by Wm. Huntsford.² This, as Howe and Allen³ conclude, is doubtless the specimen now preserved in the Museum of Comparative Zoology, at Cambridge, catalogued: No. 3864, Pigeon Cove, October, 1863; collected by Wm. Kuntfort, October, 1863. There are but three other records for the State.

140 [327] *Elanoides forficatus* (Linn.).

SWALLOW-TAILED KITE.

Accidental visitor from the west.

Essex County is fortunate in having one of the two records for this bird in Massachusetts, the other being only *seen* at Whately prior to 1870.⁴ The Essex County bird was shot by Mr. R. L. Newcomb⁵ at West Newbury, near the Merrimac River, the last of September, 1882. It is a fine specimen and is now in the collection of the Peabody Academy.

141 [331] *Circus hudsonius* (Linn.).

MARSH HAWK.

Common summer resident, very rare in winter; March 21 to November 22 (January 21).

Eggs: May 27 to June 1.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 223, 1856.

² J. A. Allen: Proc. Essex Inst., vol. 4, p. 81, 1864.

³ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 60, 1901.

⁴ J. A. Allen: Amer. Nat., vol. 3, p. 645, 1870.

⁵ Elliott Coues: Bull. Nuttall Orn. Club, vol. 8, p. 61, 1883.

The winter record is of a bird seen by me at Ipswich, on January 21st, 1900.

In the salt marshes and sand dunes, and in the open farm lands near the sea, this is the most common Hawk. It is always a pleasure to watch its graceful flight as the bird skims the ground, showing now its breast, now its back with the snowy white rump. One is at a loss which to admire most, the rich brown females and young, or the blue adult males.

On June 26th, 1904, Mr. F. B. McKechnie and I found a Marsh Hawk's nest at Ipswich containing five young. We were led to it by the actions of the adult pair. The hissing whistle of the old bird was heard, and, looking up, we saw the male with a mouse in his talons, while his mate was rapidly flying to meet him. The mouse was soon transferred from one to the other, the birds flying up into the air to meet each other. The female repaired to a nearby sand dune where she sat for a minute and then flew with the mouse directly to a bushy place back of the dunes, and disappeared, soon to reappear without the mouse. Going directly to the spot, we easily found the nest in a tangle of wild roses, bayberry and *Spiraea* bushes. The bushes were all about but they did not conceal the nest, which was a flat thin structure about two feet in diameter, directly on the ground. It was composed partly of coarse grasses but chiefly of sprigs of *Hudsonia tomentosa*, which grows so abundantly among the dunes.

Sitting or standing on the nest were four young Hawks, while a fifth was about a foot outside. They were fully two thirds grown and still covered with the yellowish white natal down, with a varying amount of juvenal feathers, especially on their backs and wings. A few scattered brown feathers were to be seen on their breasts. One of the birds was considerably smaller than its fellows and was clothed almost entirely in the natal down. With their white heads and dark backs they looked like miniature Bald Eagles.

On our near approach they assumed threatening attitudes, with open hissing mouths and raised wings, looking us directly in the eyes. They even struck at us with their talons. The nest and surroundings were clean with the exception of one or two droppings and one pellet. There were, however, some sinister-looking carrion beetles walking about among and even over the feet of the young. The pellet consisted chiefly of mouse fur and contained portions of several small beetles.

During the half hour we spent in examining and photographing the young, the adults were not to be seen, except when the female flew by twice within about 200 yards, emitting on one occasion the usual hissing whistle, on the other a sharp, but not loud, rapidly repeated *kee kee kee*. I have also heard them call *kek*, *kek*, *kek*, something like a Flicker.

Three weeks later near the same place, the female flew over my head,

and whistled as she approached the nesting site. Upon this, four full grown young Hawks flew up to meet her and she dropped from her talons a mouse, which after falling about five feet was skillfully caught in the air by one of the youngsters. How it was done, whether in the bill or in the talons, I could not make out in the confusion. It certainly did not get by the birds, who at once retired to the ground, the successful one to eat its prize. Although the Marsh Hawk rarely alights in a tree, usually preferring the ground, I once saw one on the top of a small cedar perhaps eight feet tall.

Although these birds are of great benefit to the farmer in killing many mice, there is no doubt but that they occasionally purloin a bird or two. One shot by Mr. Dodge contained the remains of a Flicker and Mr. C. W. Loud shot a fine blue male that was about to descend on one of his sandpiper decoys back of Ipswich Beach. Examining the neighborhood of the nest above referred to, on July 24th, I found three pellets containing mouse fur and bones, and three consisting of feathers and birds' bones. There were also some long bones of a good-sized bird, and a breast-bone of a smaller bird near the nest.

142 [332] **Accipiter velox** (Wils.).

SHARP-SHINNED HAWK.

Common transient visitor, rare summer resident, very rare in winter; March 10 to November 9 (December 7, January 5).

Eggs: May 27 to June 10.

Mr. J. A. Farley tells me that previous to 1894 he considered the Sharp-shinned Hawk a common summer resident, for he used to find several nests every season. Since then its numbers in summer have much decreased. The stomach of one of the specimens of this Hawk in my collection, contained a Song Sparrow; the stomach of another contained two Warblers and a Sparrow; and that of a third contained a Warbler.

143 [333] **Accipiter cooperii** (Bonap.).

COOPER'S HAWK.

Permanent resident, common in summer, very rare in winter; April 24 to October 7 (January, February 10).

Eggs : May 8 to June 11.

This bird probably does much of the damage for which the nearly innocent *Buteos* or "Hen Hawks" are blamed. I have a specimen in my collection that was killed with a whip after having flown into a barn at Magnolia in pursuit of chickens.

144 [334] **Accipiter atricapillus** (Wils.).

AMERICAN GOSHAWK.

Rare and irregular late autumn visitor ; October and November.

There are seven specimens from the County in the collection of the Peabody Academy, all taken in October and November.

Mr. C. H. Houghton, of Rowley, has a fine female specimen that was caught by a farmer of that town in a steel trap in his chicken-yard. Mr. J. A. Farley reports one for Lynnfield, on November 19th, 1892.

145 [337] **Buteo borealis** (Gmel.).

RED-TAILED HAWK ; "HEN HAWK."

Rare summer resident, more common transient visitor, rare in winter.

Eggs : April 27.

With the cutting of the timber this bird has sought other regions, and has greatly diminished in numbers during late years.

146 [339] **Buteo lineatus** (Gmel.).

RED-SHOULDERED HAWK ; "HEN HAWK."

Permanent resident, common in summer, uncommon in winter.

Eggs : April 3 to June 6.

This is our most common Hawk, except in the open country near the sea where the Marsh Hawk takes first rank.

Its abundance is well shown by the fact that one collector obtained for Mr. William Brewster, at Georgetown, nine sets of eggs in 1897, between the dates of April 11th and 25th inclusive. Four of the nests were in oaks from twenty to forty feet from the ground and five were in pines from twenty-five to sixty feet from the ground. Again, in 1900, one man found nine nests with eggs in various parts of the County between April 23d and 28th.

On October 4th, 1903, I saw four of these birds together in the Ipswich dunes.

This is the bird that the farmer calls a Hen Hawk and tries to shoot on sight, while in reality it is one of his best friends. The record of stomach contents of a specimen taken in Ipswich, — namely, a mouse and a grasshopper, — is typical for the species.

147 [342] **Buteo swainsoni** Bonap.

SWAINSON'S HAWK.

Accidental visitor from the west.

There are three records of this rare Hawk for the County, as follows. A female¹ taken at Hamilton (not Salem), on April 20th, 1872, by N. Butler. The specimen is now in the collection of the Peabody Academy. A male taken at Salem, on October 28th, 1889, by R. L. Newcomb, now in the same collection. This bird has hitherto been unrecorded. Through the kindness of Mr. John Robinson, I showed this specimen at a meeting of the Nuttall Ornithological Club on November 7th, 1904, and compared it with specimens in Mr. Brewster's museum. There is no doubt as to its identity. A female with undeveloped ovaries, was taken at Essex, on May 29th, 1892, and is now in the collection of Mr. William Brewster.²

Howe and Allen³ omit the second record given above and add only one other record for the State: a bird shot at Wayland, on September 12th, 1876.

¹ J. A. Allen : Bull. Essex Inst., vol. 10, p. 22, 1878.

² Wm. Brewster : Auk, vol. 10, p. 82, 1893.

³ R. H. Howe, Jr., and G. M. Allen : The Birds of Massachusetts, p. 63, 1901.

148 [343] **Buteo platypterus** (Vieill.).

BROAD-WINGED HAWK.

Not uncommon transient visitor, very rare summer resident; May 3, July; September 14 to October 16.

Mr. J. A. Farley tells me that he has several times seen the bird in the breeding season within the limits of the County, and that it still breeds in Boxford and Georgetown. Mr. C. E. Brown found a nest with young "many years ago." The clearing off of the forests, however, is not to its taste and it seeks wilder regions.

Mr. Robert Weston Smith shot a bird of this species near Chebacco Lake between the 1st and 15th of July, 1903, a date that suggests breeding.

149 [347a] **Archibuteo lagopus sancti-johannis** (Gmel.).

AMERICAN ROUGH-LEGGED HAWK.

Rare transient visitor (winter).

Mr. Maynard¹ records a specimen sent him by Mr. J. F. Le Baron, of Ipswich, killed while flying over the marshes. There are three specimens in the Essex County collection of the Peabody Academy, two of which are dated November and February 21st, 1861, respectively. Mr. J. M. Dodge shot a female in Wenham on December 9th, 1900, and it is now in the collection of Mr. J. R. Mann. Mr. Owen Durfee and Mr. F. B. McKechnie and I saw a bird probably of this species, at Ipswich on November 22d, 1903.

150 [349] **Aquila chrysaëtos** (Linn.).

GOLDEN EAGLE.

Very rare visitor.

A Golden Eagle was killed in Lynn,² in 1834. There is a specimen at the

¹ C. J. Maynard: The Naturalist's Guide, p. 137, 1870.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 203, 1856.

Peabody Academy taken in Essex County, in 1868. A male was shot at Lynnfield, November 23d, 1886, and the specimen is now in the collection of Mr. William Brewster.¹ Young Bald Eagles are often mistaken for Golden Eagles and it is therefore never safe to accept a record without seeing the specimen. I merely mention here that an Eagle was shot at Byfield, about 1898, and was mounted by Mr. C. H. Houghton of Rowley, who knows the distinguishing marks, and who assured me that it was a Golden Eagle with tarsi feathered to the toes. A recent attempt to trace the specimen proved unsuccessful.

151 [352] *Haliaeetus leucocephalus* (Linn.).

BALD EAGLE.

Uncommon visitor.

There are five specimens of this bird in the Peabody Academy collection and single specimens from the County are not uncommon. On September 16th, 1893, Mr. Walter Faxon saw a young bird on the Ipswich dunes and upper part of the beach, and Mr. R. H. Howe, Jr., once saw one on the beach at Ipswich. On May 24th, 1903, as I was starting from my house at Ipswich, at 4 A. M., in company with Mr. Ralph Hoffmann, a Bald Eagle flew over our heads close to the house, and went straight to the beach. He was pursued by Crows, who appeared about the size of Kingbirds in comparison. The Eagle had probably been spending the night in the woods, perhaps of Boxford, and was going to a repast of fish on the beach. The lighthouse keeper had reported seeing him for several days. We found him at the beach and he alighted on the peak of a sand dune, so covered by another dune that I was able to watch him unsuspected within forty yards. This latter dune is shown in the frontispiece. The bird was in immature plumage and was easily distinguished from the Golden Eagle by his bare lower tarsi, which he displayed to advantage when he scratched his head. When he flew off, the markings of his tail and wings in the sand were plainly to be seen. This noble bird also left a dropping which smelt strongly of decayed fish. It is possible that this is the same bird that was found busily engaged in eating a dead fish at Turk's Head, on Cape Ann. So intent was he on this repast that a man crept stealthily up and slew him with a hoe, a magnificent vindication, if one is needed, for the "man-with-the-hoe."

Dr. Phillips records one seen flying over Wenham Lake in November, 1901,

¹ Wm. Brewster: Auk, vol. 4, p. 75, 1887.

and another on September 29th, 1903. On January 10th, 1904, Mr. J. M. Dodge saw one in Topsfield. On May 21st, 1904, Mr. J. R. Mann saw an adult and one in immature plumage in Topsfield, and on July 21st, 1904, I saw one at Ipswich Beach, and again, probably the same bird, on July 28th.

Newspaper stories appear from time to time, in various parts of the country, of children being carried off or attempts being made in that direction, by Eagles. In the Boston papers of October 17th, 1903, there was a long account of such an attempt, the classical eagle story. It began: "Carl Russell, of Lynnfield, fought a terrific battle yesterday with four gigantic Eagles, which had swooped down on two small children. Russell killed one of the birds, and after firing twenty shots at the other three, finally drove them away. The children escaped unhurt. Russell's clothing was torn to tatters, and he was badly scratched about the hands and face." I wrote to Mr. Russell who kindly replied that he had shot an American Osprey, and that there were no children anywhere about, but that a reporter hearing he had shot a large bird, had invented the story out of whole cloth! One paper even went so far as to give photographs of the children attacked!

[354a] *Falco rusticolus gyrfalco* (Linn.). GYRFALCON. This bird, in the collection of Mr. William Brewster, was originally reported as a Black Gyrfalcon shot "near Lynn"¹; but Mr. Brewster² states that it was shot at Melrose, and therefore outside of the County, on January 1st, 1891.

152 [354b] *Falco rusticolus obsoletus* (Gmel.).

BLACK GYRFALCON.

Very rare winter visitor.

A male³ was shot at Ipswich by J. J. Gould, on November 7th, 1874, and is now in the Peabody Academy collection. A female⁴ was shot at Ipswich, on March 11th, 1893, and was mounted by N. Vickary. A third specimen in fine plumage was shot at Ipswich, by G. L. Woodbury about 1898, in the spring, and is now owned by Dr. F. H. Stockwell of Ipswich.

¹ A. M. Tufts: Ornithologist and Oologist, vol. 16, p. 61, 1891.

² Wm. Brewster, ed.: Minot's Land-birds and Game-birds of New England, p. 479, 1895.

³ H. A. Purdie: Bull. Nuttall Orn. Club, vol. 4, p. 189, 1879.

⁴ N. Vickary: Ornithologist and Oologist, vol. 18, p. 51, 1893; also Wm. Brewster, ed.: Minot's Land-birds and Game-birds of New England, p. 480, 1895.

153 [356] **Falco peregrinus anatum** (Bonap.).

DUCK HAWK.

Not uncommon transient visitor ; May 24 ; September 19 to October 9.

Along the immediate shore, this Hawk is not uncommon during the migrations. In the autumn, he boldly darts down to pick up the dead or wounded shore birds, even if the gunner be near at hand and has just fired his gun. Three specimens in my collection were obtained from gunners who had shot the would-be robbers.

I have several times seen them chase shore birds, who, by twisting and turning, tried to escape the pursuers. The evident attempt of the Duck Hawk is to rise above his quarry so as to strike at it with his talons, and the frightened Sandpiper in the attempt to escape, rises higher and higher. The evolutions of the two birds are so quick that they are difficult to follow with the eye. In the stomach of one Duck Hawk I found the remains of a Phoebe, a Sparrow, and feathers of several other birds. Another had a large shore bird in his stomach.

154 [357] **Falco columbarius** Linn.

PIGEON HAWK.

Common transient visitor ; March 12 to May ; September 7 to October 6.

Three Hawks of this species in my collection, all taken in Essex County in the autumn, showed the following stomach contents : in one a Song Sparrow ; in a second, a Semipalmated Sandpiper and a grasshopper ; and in a third, grasshoppers alone.

155 [360] **Falco sparverius** Linn.

AMERICAN SPARROW HAWK.

Common summer resident, locally ; March 20 to November 8.

Eggs : April 27.

This beautiful little Hawk is as good as it looks. Field mice and grasshoppers are its fare, but the gunner always feels that he has done a righteous

act when he shoots one of them. Were it not for this ancient prejudice, this Hawk would doubtless become more common in the pastures and hillsides near the sea.

156 [364] *Pandion haliaëtus carolinensis* (Gmel.).

AMERICAN OSPREY; FISH HAWK.

Common transient visitor; April 8 to May 21; (July 31); August 26 to October 18.

Many years ago, this Hawk bred at Ipswich and Georgetown, but it is now seen in Essex County during the spring and autumn migrations only. Dr. J. A. Allen,¹ in his *Rarer Birds of Massachusetts*, speaks of "a former nesting site near Ipswich being still remembered by some of the older residents there."

Dr. J. C. Phillips has noticed, for five years or more, at Wenham Lake, that the autumnal flight of Ospreys is large, sometimes as many as a hundred birds being seen going south and that the heaviest flight generally *precedes* a heavy flight of Ducks, so that preparations for good shooting are always made when a flight of Ospreys is seen.

In 1903, beginning on September 15th, careful notes were taken of the number of Ospreys seen flying south from his shooting stand on Wenham Lake. The record is as follows: September 22d, two seen; September 23d, one seen; September 24th, five seen; September 25th, "a few" seen; September 28th, nine seen (five in one bunch); September 29th, twenty-seven seen. On this day forty-nine Ducks were seen and five were shot. On the next day, September 30th, only two Ospreys were seen, but there was a very heavy flight of Black Ducks and seventeen were shot. At dark, there was a "big flight" of Night Herons. There is no record of Ospreys again until October 14th, when one belated bird was seen. This makes a total of some fifty Ospreys. The weather was warm and with a little southerly wind on September 22d to 24th, while on the 28th and 29th, when so many Ospreys were flying, it was cold and clear with a northwest wind. On the 30th, when there was a large flight of Black Ducks, it was calm and warm again.

The specimens of Ospreys taken in the autumn are all laden with fat, and this fat has a strong fishy smell.

¹ J. A. Allen: *Amer. Nat.*, vol. 3, p. 569, 1870.

157 [365] *Strix pratincola* Bonap.

AMERICAN BARN OWL.

Accidental visitor from the south.

Dr. J. A. Allen states, in his *Rarer Birds of Massachusetts*,¹ that a Barn Owl was shot in Lynn, about 1863, by James Teal. Teal was the *nom-de-plume* of Mr. R. L. Newcomb. Mr. Maynard² says, in his *Naturalist's Guide*, that "Mr. Vickery [*sic*] informs me that he mounted a specimen that was taken in Lynn during the autumn of 1865. This is the first authentic instance of its capture in this section." It is possible that both these records refer to the specimen dated 1862, that is now in the collection of the Peabody Academy.

There is another specimen at the Peabody Academy, a female taken at Danvers near the Asylum, on October 18th, 1900, by Willis Hackett. Howe and Allen³ give the James Teal record and only four others for the State.

I add the following note from The Nidiologist⁴: "Percy G. Bourne, of Haverhill, took a set of Barn Owl's eggs identified by Webster, which is something rare for Massachusetts." It is probable that this is a mistake for *Barred* Owl.

158 [366] *Asio wilsonianus* (Less.).

AMERICAN LONG-EARED OWL.

Uncommon permanent resident, rather common autumn transient visitor.

Eggs: April.

Nearly all the specimens of this Owl that I have seen were taken either in October or in November. On April 3d, 1890, Dr. A. P. Chadbourne started six birds of this species that were together in the Ipswich dunes. He shot one, which is now in his collection. Mr. J. A. Farley tells me that an instance of the breeding of this bird in the southern part of the County in April, 1893, came to his notice.

¹ J. A. Allen: *Amer. Nat.*, vol. 3, p. 646, 1870.

² C. J. Maynard: *The Naturalist's Guide*, p. 130, 1870.

³ R. H. Howe, Jr., and G. M. Allen: *The Birds of Massachusetts*, p. 72, 1901.

⁴ P. G. Bourne: *Nidiologist*, vol. 1, p. 166, 1894.

159 [367] *Asio accipitrinus* (Pall.).

SHORT-EARED OWL.

Common transient visitor, rare in winter ; September 27 to May 2.

This bird formerly bred in this coast-county and there is an egg in the Peabody Academy collection which Mr. J. H. Sears tells me he obtained from a nest in Danvers, about twenty-six years ago, *i. e.*, in 1878. I have seen the Short-eared Owl as late as April 24th in the Ipswich dunes, and there is a specimen in the Peabody Academy collection taken on May 2d, both very late dates for a migrant Owl, as it should lay its eggs about the middle of April. A male specimen in my collection, taken at Ipswich on April 8th, 1904, had, however, only slightly enlarged testicles. In 1894, I saw the wings and tail of a bird of this species that was killed by flying against Ipswich Light some time early in May of that year, but the exact date is uncertain.

Mr. Brewster says, in Minot's Land-birds and Game-birds of New England¹: "Although writers have very generally asserted that this Owl regularly spends the winter in Massachusetts, I know of but one specimen taken here at that season, and our local taxidermists (whose experience, for obvious reasons, is well-nigh conclusive on such a point), agree that the bird is rarely to be found near Boston during the months of January and February."

I am able to give the following four records for the winter season. A specimen was taken at Ipswich on December 31st, 1895, by Mr. R. W. Gray, and a male was taken on January 1st, 1896, at the same place by Mr. G. C. Shattuck, both recorded by Mr. R. H. Howe, Jr.² On February 12th, 1896, my brother, Mr. W. S. Townsend, shot a female at Ipswich and it is now in my collection. On January 21st, 1900, I saw one in the Ipswich dunes. I also saw one on December 6th, 1903, but this might be classed merely as a late migrant, although the birds are most commonly found in October and November.

The sand dunes are the favorite hunting-grounds of the Short-eared Owls and their usual perch is the ground from which the intruder generally starts them at close range. They fly off silently. After being disturbed once, however, they cannot be approached easily again, as they generally rise long before their neighborhood is reached. I have also seen one sitting on a post by the roadside, and when startled, it flew over the salt marshes. Their flight is by alternate flapping and soaring.

¹ Wm. Brewster, ed. : Minot's Land-birds and Game-birds of New England, p. 343, 3d ed., 1903.

² R. H. Howe, Jr. : Auk, vol. 13, p. 257, 1896.

The stomach of a specimen in my collection taken at Ipswich on February 12th, 1896, contained the bones and fur of four field mice. The stomach of another, taken at the same place on April 8th, 1904, contained the remains of two Song Sparrows and one Savanna Sparrow. On April 24th, 1904, I started a Short-eared Owl from among bayberry bushes in the Ipswich dunes, where numerous scattered feathers showed that it had been eating a Robin.

160 [368] *Syrnium varium* (Barton).

BARRED OWL.

Uncommon permanent resident, at times common in the autumn.

Although this bird undoubtedly breeds, I can give no actual records of its nesting (see, however, page 215). It is more commonly found in the autumnal flight than during any other part of the year.

161 [370] *Scotiaptex nebulosa* (Forst.).

GREAT GRAY OWL.

Very rare and irregular winter visitor.

I have found seven records for the County. Nuttall¹ records the first as follows: "One was caught perched on a wood-pile, in a state of listless inactivity, in the morning after day-light, at Marblehead, in February, 1831. This individual survived for several months, and showed a great partiality for fish and birds. At times he uttered a tremulous cry or *hō hō hō hō hoo*, not very dissimilar to that of the Mottled Owl." The second record is of one taken at Marblehead in January, 1835.² A third specimen, now in the Peabody Academy collection, was taken in Wenham in February, 1859.³ A fourth specimen was captured in 1864, at Salem, and presented by J. W. Roberts to the Essex Institute.⁴ A fifth example was taken at Salem on November

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 128, 1832.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 204, 1856.

³ C. J. Maynard: The Naturalist's Guide, p. 130, 1870.

⁴ Anon.: Proc. Essex Inst., vol. 4, p. cv, 1865.

10th, 1866.¹ This is probably the specimen now in the Peabody Academy collection, labeled, "Salem, January, 1867." It is the specimen spoken of by Maynard² as having been taken during the winter of 1866-67 by F. W. Putnam. The sixth bird was taken at Lynn,³ in the winter of 1872; and the seventh was a female, now in the Peabody Academy collection, taken at Marblehead, on February 16th, 1891. In this year, the winter of 1890-91, a considerable flight of the Great Gray Owls occurred throughout eastern Maine reaching also into eastern Massachusetts. Mr. Brewster⁴ states that in Maine they "were killed in such numbers that a single taxidermist (Mr. Crosby of Bangor) received no less than twenty-seven specimens." It will be seen that three or nearly one half of our specimens were taken in Marblehead. Howe and Allen have seventeen records in all for the State but they omit the 1864 record and the 1891 Marblehead record.

162 [371] *Cryptoglaux tengmalmi richardsoni* (Bonap.).

RICHARDSON'S OWL.

Irregular and very rare winter visitor.

There are seven records for this rare bird in Essex County, as follows: (1) Lynn, 1863, a bird taken by J. Southwick⁵; (2) a female taken in Lynn on February 4th, 1882⁶; (3) a male, taken in Salem, in 1884, now in the Peabody Academy collection; (4) a specimen taken at Saugus, December, 1885, and now in the Peabody Academy collection; (5) a bird of this species was found dead in Peabody, on February 2d, 1889⁷; (6) Mr. M. A. Frazar, received for mounting, a specimen taken on a fishing schooner off the coast of Essex County, in January, 1903; (7) an adult male was caught in a barn in Ipswich by some boys in March, 1903. It was mounted by Dr. F. H. Stockwell and is now in my collection. Howe and Allen give the record of numbers 1, 2, and 5, of the above and in addition ten other records for other places in the State.

¹ J. A. Allen: Amer. Nat., vol. 3, p. 570, 1870.

² C. J. Maynard: The Naturalist's Guide, p. 130, 1870.

³ S. F. Baird, T. M. Brewer, and R. Ridgway: Land Birds, vol. 3, p. 32, 1874.

⁴ Wm. Brewster, ed.: Minot's Land-birds and Game-birds of New England, p. 345, 1895.

⁵ J. A. Allen: Amer. Nat., vol. 3, p. 646, 1870.

⁶ Everett Smith: Forest and Stream, vol. 20, p. 285, 1883.

⁷ G. O. Welch: Ornithologist and Oologist, vol. 14, p. 30, 1889.

163 [372] *Cryptoglaux acadica* (Gmel.).

SAW-WHET OWL; ACADIAN OWL.

Rare winter visitor ; September 20 to February.

I have entered this Owl as a winter visitor, for I have no summer records, although it is possible that the bird is a resident. Mr. A. F. Gray,¹ writing of the resident birds of Danvers, in 1876, states that the Acadian Owl is "a rare resident at all times." Mr. J. A. Farley tells me that he has not found it in Essex County in summer.

On February 3d, 1892, a female Saw-whet Owl, evidently seeking for immortality, fluttered against the windows of the Peabody Academy in Salem. Its wishes were respected.

The note of this Owl gives it its name, as it resembles strikingly the whetting or filing of a saw. Like this process, it varies from a harsh scrape to a high pitched rasp or whistle, at times not unmusical, but often as trying to the ears as the procedure with the saw. I have heard a Saw-whet Owl produce this varying note in October in Wenham with great regularity some seven times a minute for an hour at a time.

164 [373] *Megascops asio* (Linn.).

SCREECH OWL.

Common permanent resident.

Eggs: April 15 to May 5.

The old neglected apple trees, of which there are many in Essex County, furnish an abundance of suitable holes for nesting sites for this bird.

On September 18th, 1877, at Magnolia, I heard a great commotion among some Chickadees, Black-throated Green Warblers, and Red-eyed Vireos on account of the presence of an Owl in a hemlock tree. After I had shot the Owl, the small birds dispersed, and one of the Chickadees sang his two clear spring notes in token of victory.

I have a specimen in my collection given me by a gunner who had shot it in Ipswich, in February, as it was feeding on a freshly killed hen Pheasant. I

¹ A. F. Gray: Forest and Stream, vol. 6, p. 181, 1876.

was inclined to doubt his statement, but Bendire¹ gives an incident taken from Forest and Stream, of a Screech Owl attacking a Plymouth Rock rooster weighing nine pounds.

On opening his camp at Wenham Lake on February 3d, 1901, Dr. Phillips found "a live Screech Owl as sole occupant. He had apparently been there a week or so, having come down the chimney."

165 [375] **Bubo virginianus** (Gmel.).

GREAT HORNED OWL.

Not uncommon permanent resident.

Eggs: April 20.

The date given above for eggs is a late one; the nest was found by Mr. W. A. Jeffries. It is probable that most of the birds nest in the latter part of February or in March.

166 [376] **Nyctea nyctea** (Linn.).

SNOWY OWL.

Irregular, but at times common visitor in the late autumn, less common in winter and early spring; November 4 to April 9.

The largest recorded flight of these Owls occurred in the autumn of 1876. Mr. Ruthven Deane² says: "About the first of November, 1876, large numbers suddenly appeared along our coast . . . I first heard of them on our Massachusetts coast as frequenting the islands off Rockport, where numbers were taken. One gunner spoke of seeing fifteen at once on a small island one foggy morning, nearly half of which he procured. As the Owls flew around over the rocks uttering their weird cries, they presented a scene of rare occurrence in New England. . . Many of the specimens were in exceedingly poor condition. . . The cause of the sudden visit of such an unusual multitude of these boreal birds, coming as they did when the weather for a few days was unusually warm for the season, the thermometer standing at 75° at noonday, is a question not easily solved."

¹ Charles Bendire: Life Histories of North American Birds, vol. 1, p. 357, 1892.

² Ruthven Deane: Bull. Nuttall Orn. Club, vol. 2, p. 9, 1877.

Mr. A. F. Tarr, keeper of Thatcher's Island Lights, notes one seen on the island on November 20th, 1886, and he also notes them from November 5th to 25th, in 1894. A considerable flight took place in 1892.

In the winter of 1901-2, another flight took place,¹ three being shot at Eagle Hill, by Mr. T. C. Wilson. Dr. A. L. Reagh shot one there on February 2d, 1902. On November 4th, 1902, my brother, Mr. W. S. Townsend, saw one in the Ipswich dunes. The Owl was on the apex of a pointed dune and could not be successfully stalked. Again, in 1905, on January 19th, my brother found a single Snowy Owl in the Ipswich dunes. The bird was perched on a dune and some Crows were scolding it.

167 [377] *Surnia ulula caparoch* (Müll.).

AMERICAN HAWK OWL.

Very rare and irregular winter visitor.

There is only one record of this Owl in Essex County: a male, taken in Lynn, in November, 1885, and now in the collection of the Peabody Academy. It was recorded in the *Ornithologist and Oologist*,² as follows: "Hawk Owls, usually considered rare, have been quite plentiful from Maine to Minnesota. . . . Mr. Vickary. . . of Lynn reported one taken near that locality."

Howe and Allen³ give this record and nineteen others from other parts of the State.

168 [378] *Speotyto cunicularia hypogæa* (Bonap.).

BURROWING OWL.

Accidental visitor from the west.

There is only one record, and it is the only record for New England. The bird was taken at Newburyport, on May 5th, 1875, by H. Joyce and J. K. Clifford.⁴ The specimen is now in the mounted collection of the Museum of Comparative Zoology, at Cambridge.

¹ Ruthven Deane: *Auk*, vol. 19, p. 271, 1902.

² F. B. W [ebster]: *Ornithologist and Oologist*, vol. 10, p. 32, 1885.

³ R. H. Howe, Jr., and G. M. Allen: *The Birds of Massachusetts*, p. 71, 1901.

⁴ Ruthven Deane: *Rod and Gun*, vol. 6, p. 97, 1875.

169 [387] **Coccyzus americanus** (Linn.).

YELLOW-BILLED CUCKOO.

Not uncommon irregular and local summer resident ; May 10 to September.

Eggs : May 20 to June 30.

The Yellow-billed Cuckoo is largely a bird of the Upper Austral zone, but breeds in Essex County, chiefly in the southern part. Thus I have records for Lynn, Swampscott, Beverly, Lynnfield, Andover, and also, but rarely, Ipswich. It appears to vary irregularly in numbers, being more common in some years than in others.

170 [388] **Coccyzus erythrophthalmus** (Wils.).

BLACK-BILLED CUCKOO.

Common summer resident ; May 10 to September 25 (October 21).

Eggs : May 30 to June 17.

This Cuckoo generally departs in September, but I saw one at Ipswich as late as October 21st, in 1900.

Although I have several times seen Cuckoos chased with great wrath by Robins, I have never found their eggs in Robins' nests, where they are said occasionally to lay them after the manner of the European Cuckoo.

The nocturnal habits of flight and song in the Black-billed Cuckoo may account for the fact that one was killed by striking one of Thatcher's Island Lights at 11 P. M., on June 10th, 1903. I have heard it calling at night.

171 [390] **Ceryle alcyon** (Linn.).

BELTED KINGFISHER.

Common summer resident ; (winter) ; April 7 to October (December 29, January 31).

Eggs : May 17 to June 6.

My winter records are of a bird seen from the train at Beverly, on December 29th, 1902, and of one recorded by G. O. Welch as seen near Salem on January 31st, 1889.¹

The Kingfisher is not often seen in the Ipswich marshes in June and early July, but in late July, August, and September it frequently takes its station there, and fishes in the creeks.

On October 13th, 1903, I saw a curious sight in Boston Common. A Belted Kingfisher was flying over the Frog Pond uttering constantly his rattling call, and was closely pursued by a Domestic Pigeon. The Kingfisher doubled back and forth at least three times, the whole length of the pond, the Pigeon eagerly following at a distance of twenty or thirty feet. At one time an English Sparrow, with his characteristic hatred of our native birds, flew viciously at the frightened Kingfisher, who redoubled his racket. Finally the Kingfisher alighted in a tall elm and the Pigeon disappeared.

172 [393] *Dryobates villosus* (Linn.).

HAIRY WOODPECKER.

Not uncommon permanent resident, more common autumn transient visitor.

Eggs: May 30.

Mr. J. A. Farley tells me that he has found the nests of the Hairy Woodpecker sparingly but regularly in Lynnfield, Middletown, and Georgetown. Messrs. F. G. and M. C. Blake have noted the bird in Andover on July 5th, 1900, and I found two on May 22d, 1904, in Topsfield, evidently breeding birds.

173 [394c] *Dryobates pubescens medianus* (Swains.).

NORTHERN DOWNY WOODPECKER.

Common permanent resident.

Eggs: May 22 to June 21.

This is the common small Woodpecker of the County.

¹G. O. Welch: Ornithologist and Oologist, vol. 14, p. 30, 1889.

174 [400] *Picoides arcticus* (Swains.).

ARCTIC THREE-TOED WOODPECKER.

Irregular but on rare occasions a common winter visitor.

In the winter of 1860-61, there was an invasion of these birds in numbers. Mr. William Brewster¹ says they were abundant, and remained through the entire winter of 1860-61 in a wood of white pine near Lynn, killed by fire in 1860 and afterwards attacked by borers. G. O. Welch often saw as many as six or eight in a single visit to the woods. They were mostly females, the yellow-crowned males being comparatively rare.

There are three specimens in the Peabody Academy collection. One was taken on November 21st, 1855, and another is labeled Boxford, July, 1888, A. F. Killian.

175 [401] *Picoides americanus* Brehm.

AMERICAN THREE-TOED WOODPECKER.

Irregular and very rare winter visitor.

A pair was taken at Lynn by N. Vickary, in the winter of 1860-61 and a female was also taken the same winter by G. O. Welch.² Mr. J. A. Farley notes that one was seen at Georgetown, on April 28th, 1900. Only two other records for the State are given by Howe and Allen.³

176 [402] *Sphyrapicus varius* (Linn.).

YELLOW-BELLIED SAPSUCKER.

Uncommon and irregular transient visitor; (summer); April 21; (July, August 9); September 23 to October 19.

¹ Wm. Brewster: Bull. Nuttall Orn. Club, vol. 8, p. 122, 1883.

² J. A. Allen: Amer. Nat., vol. 3, p. 572, 1870; and Wm. Brewster: Bull. Nuttall Orn. Club, vol. 8, p. 122, 1883.

³ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 77, 1901.

Mr. J. A. Farley tells me that Dr. F. H. Mosher saw one in July, 1899, in Georgetown. There is a specimen in the Peabody Academy collection, labeled August 9th. Mr. W. A. Jeffries tells me that he has found them at times in numbers during the autumn migrations in Swampscott. Thus, on October 2d, 1876, he found "a small flock" in an orchard and he shot four. I have never found more than one or two at a time. One fluttered against one of Thatcher's Island Lights, on September 28th, 1903, and was caught alive. Their bands of holes are to be commonly seen on apple trees.

177 [405a] *Ceophlœus pileatus abieticola* Bangs.

NORTHERN PILEATED WOODPECKER.

Accidental visitor.

My only reason for not placing this bird on the extirpated list is the following from Howe and Allen's list¹: "Having been noted at Manchester in December, 1885." These gentlemen have unfortunately lost the original note and are unable to give me any particulars.

It is a bird of uninhabited forest regions and even in the early part of the nineteenth century, Nuttall² said: "He is unknown, at this time, in all the maritime parts of the populous and long settled state of Massachusetts."

Dr. J. A. Allen³ says: "That the Pileated Woodpecker . . . was once a common inhabitant of all the primitive forests of this State seems to be unquestionable, though absolute proof of the fact may not be available. It still occurs in abundance throughout the older States, wherever the forests remain comparatively undisturbed, while it is well known to retire quickly when its haunts are invaded by the destroying axe of the woodsman."

178 [406] *Melanerpes erythrocephalus* (Linn.).

RED-HEADED WOODPECKER.

Very rare and irregular visitor.

¹ R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 77, 1901.

² Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 568, 1832.

³ J. A. Allen: Bull. Nuttall Orn. Club, vol. 1, p. 55, 1876.

There are three specimens in the collection of the Peabody Academy, at Salem. One of these was taken by S. Jillson, in Essex County, in 1855, and is recorded in the Naturalist's Guide.¹ A second was taken in the County on May 4th, 1878. The third was taken at Manchester, on December 16th, 1894. There is a fine male in the collection of the late Dr. Charles Palmer of Ipswich, probably taken in that place; also one in the collection of the late Dr. J. A. Jeffries, given him by Welch and taken in Swampscott in March, 1878. Mr. J. A. Farley tells me that one was seen about thirty years ago at Andover.

Dr. J. A. Allen² states in an article on the Decrease of Birds: "It is also a matter of record that the Red-headed Woodpecker has nearly disappeared, almost within the present generation, from all the region east of the Hudson River, where it was formerly as common, apparently as it is now in any of the Middle or Western States." Nuttall³ says that it "is but rarely seen in the maritime parts of Massachusetts, this region is only occasionally visited by solitary stragglers; yet, in the western parts of the state, they are said to be as common as in the middle states."

Miss G. B. Goldsmith, of Manchester, writes me that she saw a Red-headed Woodpecker in Salem, on January 15th, 1903, and at frequent intervals from that date until the first or middle of June. A friend had seen the bird at intervals since the last of November. The Woodpecker remained in the same vicinity all this time, and was very tame, allowing a number of bird-students to approach within a few feet of the tree.

179 [412a] *Colaptes auratus luteus* Bangs.

NORTHERN FLICKER; "GOLDEN-WINGED WOODPECKER"; "PIGEON WOODPECKER."

Resident, very common in summer, not uncommon in winter.

Eggs: May 20 to June 20.

It is common to find old barns riddled with holes made by Flickers, the holes being made generally along the seams between two boards. Mr. J. A. Farley⁴ describes such a barn in Lynnfield, where a Flicker nested, laying her eight eggs in a depression in a pile of hay "close to the side of the barn and

¹ C. J. Maynard: The Naturalist's Guide, p. 129, 1870.

² J. A. Allen: Bull. Nuttall Orn. Club, vol. 1, p. 55, 1876.

³ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 570, 1832.

⁴ J. A. Farley: Auk, vol. 18, p. 399, 1901.

about one foot below the hole made therein by the birds." I have known gunners to make the excuse for shooting Flickers that they damaged buildings. In one case that came to my notice, a pair reared a brood of young in a bunk of a shooting shanty, having gained admittance by piercing the walls.

Flickers made a hole in the side of a boat-house on the Ipswich marshes only a few feet above a large opening over a door through which they could more easily have entered the house. There were also several beginnings of holes. These were made during December and January and not therefore, with the idea of nesting. During the winter and spring the birds perched on the beams inside the boat-house as was shown by their droppings which were composed chiefly of bayberries and ants. Like several other birds, notably the Crow, Tree Swallow, Chickadee, and Yellow-rumped Warbler, Flickers are very fond of bayberries. I started fifteen or twenty of these birds from about an acre of bayberry bushes on December 20th, 1903, on Cape Ann close to the sea.

180 [417] *Antrostomus vociferus* (Wils.).

WHIP-POOR-WILL.

Common summer resident ; May 11 to September 18.

Eggs: May 29 to June 1.

On May 22d, 1904, when the sun set at 7.05 P. M., I noted the first song or call of the Whip-poor-will in the Topsfield marshes at 7.30. On June 24th, 1904, the sun setting at 7.24 P. M., the first song was heard at 7.55 P. M. and was much less energetic in force and number of repetitions than in May. In May (see page 45), the Whip-poor-will sings all the night long; on May 22d, 1904, the last one was heard at 3.45 A. M., the sun rising at 4.16. I have counted their "*whip-poor-wills*" many times, and 296 is the greatest number of repetitions I have ever noted. This was on May 21st, 1904. By the middle of June, the bird is less energetic and on the night of June 24th and 25th, 93 repetitions was my largest count. On this night the bird was silent much of the time, singing mostly in the evening. The repetitions are at times accelerated and at times retarded in the speed with which they are given.

The song when heard near at hand is very sweet and clear, each song being preceded by a faint, short *chuck*. When disturbed the birds give a series of inquiring *chucks*. In the darkness of the early evening I have strained my eyes to see the singer, and have been able to make out the white markings of the neck alone, in the surrounding blackness.

181 [420] *Chordeiles virginianus* (Gmel.).

NIGHTHAWK.

Not uncommon summer resident, common transient visitor; May 15 to October 6.

In May, and again in late August and September, it is not uncommon to see flights of from ten to forty or more of these birds, pausing at times to course about the fresh or salt marshes.

They are found commonly in the cities of the County where they nest on the flat roofs of houses, an interesting case of adaptation to changing environment.

182 [423] *Chætura pelagica* (Linn.).

CHIMNEY SWIFT.

Common summer resident; April 28 to September 21; average date of arrival for nine years, May 4.

Eggs: June.

Mr. S. P. Fowler,¹ of Danvers, stated in 1860, that "Chimney Swallows have become very abundant. I can distinctly remember when they were rarely seen."

The Chimney Swifts had a hard time in the prolonged June storm of 1903, and, in 1904, the Swifts were evidently diminished in numbers.

183 [428] *Trochilus colubris* Linn.

RUBY-THROATED HUMMINGBIRD.

Common summer resident; May 9 to September.

Eggs: May 30 to June 15.

One day in August, when watching for shore birds from a blind on the

¹ S. P. Fowler: Proc. Essex Inst., vol. 3, p. 35, 1864.

beach at Ipswich, a tiny Ruby-throated Hummingbird flew close above my decoys, which looked gigantic and grotesque in comparison. Hummingbirds occasionally utter a shrill note both on the wing and when perching. I have also heard a deep note like a rattle emitted as they were chasing each other. It is very pretty to see them fly straight up together like butterflies striking their wings against each other. At these times the humming noise is temporarily stopped.

184 [444] **Tyrannus tyrannus** (Linn.).

KINGBIRD.

Abundant summer resident; May 3 to September 19; average date of arrival for eight years, May 9.

Eggs: June 10 to July 4.

The Kingbird may be found performing his erratic flight-song in the dim light of the early morning or in the dusk of the evening as well as in mid-day. He mounts into the air and then tumbles and darts down, only to repeat the performance most persistently, screaming constantly. The notes at times distantly suggest a Phoebe's. I have seen one thus employed on July 1st, after sunset, when it was quite dark and there was a thick fog. It is not uncommon for these performances to be continued late into August, long after the nuptial season.

Although far removed from the *Limicola*, the Kingbird is one of the few Passerine birds that regularly frequent the beach, and it is often to be found there catching the beach flies on the dry sand. Although it often alights on the sand, I have never seen it move from place to place by its feet alone, for it always rises into the air by means of its wings and flutters perhaps only a few inches. It might be said to hop with its wings, for its feet often dangle until it again touches the ground. I have seen a Kingbird move sidewise on the edge of a board by successive movements of the legs, with an occasional hop. Another evidence of the fondness of the Kingbird for the sea, I find in my Magnolia notes of July 13th, 1877, where one is recorded as flying over and striking his breast into the ocean.

185 [445] **Tyrannus dominicensis** (Gmel.).

GRAY KINGBIRD.

Accidental visitor from the south.

An immature bird was shot in Lynn in a tree near the roadside, on October 23d, 1869, by Charles I. Goodale.¹ This is the only record for the State.

186 [452] **Myiarchus crinitus** (Linn.).

CRESTED FLYCATCHER.

Rare summer resident ; May to September 20.

Eggs : June 13.

Mr. J. A. Farley tells me that this bird breeds regularly in Saugus, Lynn field, Georgetown, Middleton, and Peabody.

187 [456] **Sayornis phœbe** (Lath.).

PHOEBE.

Common summer resident ; March 17 to October 8.

Eggs : April 27 to July 3.

The canoeist on any of the rivers of Essex County in May is greeted at almost every bridge by a pair of Phœbes. There is no more delightful way to see many interesting birds than by exploring in a canoe the charming waterways of the County.

188 [459] **Nuttallornis borealis** (Swains.).

OLIVE-SIDED FLYCATCHER.

Very rare summer resident ; May 10 to August 22.

¹ J. A. Allen : Amer. Nat., vol. 3, p. 645, 1870.

During June, 1901 and 1902, Messrs. F. G. and M. C. Blake found the bird in Andover, where it undoubtedly breeds. It was seen in Swampscott on August 22d, 1883, and on May 23d, 1891, by Mr. W. A. Jeffries, and at Ipswich on May 21st, 1904, by Mr. H. W. Wright. There are two specimens in the Peabody Academy collection.

189 [461] **Contopus virens** (Linn.).

WOOD PEWEE.

Common summer resident ; May 21 to September 15.

Eggs: June 10 to July 10.

In the farming country of Essex County with its numerous old orchards this bird is common, and its delightful notes, although not its full song, may be heard after the breeding season till its departure for the south.

190 [463] **Empidonax flaviventris** Baird.

YELLOW-BELLIED FLYCATCHER.

Uncommon transient visitor ; May ; August 25 to September.

This Flycatcher is easily overlooked and it may not be as rare as it appears. Mr. J. A. Farley tells me that he considers it not uncommon.

[465] **Empidonax virescens** (Vieill.). ACADIAN FLYCATCHER ; SMALL GREEN-CRESTED FLYCATCHER. Entered in Putnam's 1856 list as "summer visitant, abundant." This probably referred to the Least Flycatcher, *E. minimus*. The Acadian Flycatcher is a more southern species with only one record — Hyde Park — for the State.¹

191 [466a] **Empidonax traillii alnorum** Brewst.

ALDER FLYCATCHER.

Rare summer resident ; May 20 to August.

Eggs: June 16 to July 3.

¹ [F. B. Webster] : Ornithologist and Oologist, vol. 13, p. 160, 1888.

Mr. J. A. Farley¹ has given a full account of this bird in Essex County, having found it in the breeding season both in Groveland and in Lynnfield and he has taken the nest and eggs. In one locality in Essex County, he says, "the bird is plainly increasing in numbers." He states that it arrives late in May, about the 20th, and that he has found the nests in June, always in bushy meadows grown, or growing, up more or less thickly with alders. The lower growth of wild rose bushes is the favorite nesting spot for this bird, although once he found the nest in a small shrub of meadow-sweet (*Spiraea salicifolia*, var. *latifolia*). I have, following Mr. Farley's directions, found the bird in Lynnfield, although I am more familiar with it on the coast of Maine. I have described the song in my notes as *ze whit*, very loud and harsh, and again as *wee zée-t*, frequently repeated. I have heard a bird sing almost constantly in this way for two hours. The bird sits with tail nearly horizontal, but when the song is given he points the head straight up, the tail straight down, and at once, after the effort, returns to the original position.

192 [467] **Empidonax minimus** (Baird).

LEAST FLYCATCHER; CHEBEC.

Common summer resident; April 22 to August.

Eggs: May 25 to July 1.

The vigorous call of this little Flycatcher is a familiar sound in May and June in most parts of Essex County.

193 [474] **Otocoris alpestris** (Linn.).

HORNED LARK; SHORE LARK.

Winter visitor, abundant in the autumn and early winter, not uncommon in late winter, common in the spring; September 28 to April 10.

I have kept a census of the numbers of this bird at Ipswich for some years, and from this I have deduced the above statement as to its relative abundance during the winter season. My earliest date, September 28th, is of a specimen

¹ J. A. Farley: Auk, vol. 18, p. 347, 1901.

in my collection taken at Ipswich in 1900. Another bird was seen at the same time. During the first half of October, Horned Larks are found in small numbers, but they become abundant in the latter half of the month, increase through November, and reach their height in December. During most of January they are common but in the latter part of that month and in February and early March comparatively few are to be found, while in the latter half of March they again increase in numbers but are never as common as in the fall, and a few may occasionally be found early in April. My latest date, April 10th, records a specimen taken at Ipswich, and now in Mr. Brewster's collection. It is possible that some of the very early and late dates given before the subspecies were recognized may have referred to the Prairie Horned Lark.

It is always difficult to count or estimate the number of birds seen, particularly when they are so restless as are Horned Larks, who are constantly flitting about in loose flocks. I give, however, the census referred to above of Horned Larks seen at Ipswich in the dunes and fields near the sea, as estimated during visits to that region in the last six years. Nearly all the counts are my own. I am inclined to think that the numbers are rather under- than overestimated. September 28, 2; October 2, 3; October 16, 10; October 18, 15; October 23, 40; October 26, 150; October 30, 100; November 1, 100; November 15, 75; November 20, 150; November 22, 200; December 6, 200; December 8, 300; December 28, 100; December 29, 150; December 29, 130; January 4, 150; January 12, 100; January 19, 100; January 21, 55; January 22, 25; January 24, 200; January 26, 50; February 1, 35; February 12, 12; February 14, 25; February 21, 16; February 22, 25; February 22, 8; February 25, 35; March 10, 26; March 16, 150; March 24, 50; March 25, 30; March 26, 35; March 30, 18; April 2, 20; April 3, 0; April 3, 40; April 8, 1.

Mr. Maynard¹ states in his *Naturalist's Guide* that this bird is a "common winter visitor," and in reply to a request for fuller particulars he writes me under date of January 8th, 1905, as follows: "I think the Horned Larks were variable in winter as to numbers, depending upon the depth of the snow. I remember one winter when the ground was bare most of the time, when they were common all winter. I think, however, that as a rule they are much less common in midwinter than in spring and fall." Mr. Maynard's observations at Ipswich were made about thirty-five years ago, and it is apparent that they coincide with mine.

The old term, Shore Lark, is a most appropriate name for this bird, as it is generally seen near the shore. Here it is equally at home on the beach, among the dunes, and in the salt marshes, as well as on the hills and in the cultivated

¹C. J. Maynard: *The Naturalist's Guide*, p. 121, 1870.

fields. It occurs in small or large flocks, sometimes to the number of two hundred. It is found alone or associated with Snow Buntings and occasionally with Longspurs.

The Horned Lark is a swift walker, and, considering its short legs, takes long strides. It picks at the grass-stalks from the ground, never alighting on them as do the Snow Buntings and Longspurs. It sometimes flies up from the ground, seizing the seeds on the tall grass or weed-stalks, at the same time shaking many off onto the ground, which it picks up before flying up to repeat the process. Horned Larks are frequently found in roads picking at the horse-droppings, especially when much snow has covered the grasses and weeds. They also come into the farm-yards for scraps of food.

Although a ground bird, the Horned Lark occasionally alights on the extended roots of old tree stumps two or three feet from the ground and on stone walls. I have never seen it in trees. It is a persistent fighter or extremely playful, whichever you will, and is constantly engaged in chasing its fellows. I have seen two face each other for a moment, with heads down like fighting cocks, the next instant twisting and turning in the air, one in hot pursuit of the other. When in flocks with the other winter birds, they more frequently chase them, especially the smaller Longspurs. I have also seen them chase Snow Buntings, and often Ipswich Sparrows that were feeding with them, and once, what appeared to be a Prairie Horned Lark.

Horned Larks fly in scattered flocks with an undulating motion. Their flight is often at a considerable height from the ground, and their call notes appear to come from out of the depths of the sky. These notes may be written *tssawee it, tssawet*, the sibilant being marked. At times the notes are almost trilled. They are emitted as the birds fly and occasionally from the ground.

The Horned Lark is easily distinguished by its markings and color from the white Snow Bunting, and by its large size from the Longspur and the Pipit also. It is more apt to be confused with the Pipit owing to the similarity of their notes, but a good view serves to distinguish them. The notes of the Lark are longer and more sibilant than those of the Pipit. Larks are decidedly larger, and have broader shoulders than Pipits, and the black patches below the eyes and on their breasts are distinctive. The white in the tail of the Pipit is much more noticeable than in the Horned Lark, and the wagging tail of the former is characteristic. As the birds fly overhead the black tail with white corners of the Horned Lark contrasts sharply with the white belly.

194 [47+b] *Otocoris alpestris praticola* Hensh.

PRAIRIE HORNED LARK.

Rare transient visitor and summer resident ; March 22 to November 9.

In *The Auk*¹ for January, 1904, I had the pleasure of recording the extension of the breeding range of this subspecies to the eastern coast of Massachusetts, and I have ventured to transcribe the note in full here.

"On August 9, 1903, at Ipswich, Mass., Mr. Ralph Hoffmann saw two adults of this species with a fully grown young bird. Two days later, on August 11, Mr. Thomas L. Bradlee shot, at the same place, two young birds, both females, and saw three other individuals. They were near a road in open fields not far from the sea. Again two days later, on August 13, I secured a young male of this species that was alone on the upper edge of Ipswich beach.

The specimens secured by Mr. Bradlee were examined by Dr. J. Dwight, Jr., who stated in a letter to Mr. Bradlee that the birds 'were undoubtedly *praticola*,' and 'were in juvenal plumage, moulting into first winter dress, only two or three primaries and a few rectrices remaining. In this condition this species (or any sparrow) does not and probably can not migrate, so I have no doubt the birds were hatched near where they were found.'

My own bird may have been from another brood, as although it was taken four days later, its plumage is more juvenal, being more spotted above, and having 9 juvenal rectrices and 4 juvenal primaries, against 5 rectrices and 3 primaries in Mr. Bradlee's birds. It was taken three miles from the first station.

The Prairie Horned Lark has been seen at Ipswich before in the fall migrations, but this is the first time it has been found there in the breeding season. At last this enterprising bird in its progress eastward has reached the sea. Formerly a bird of the western prairies, it was recorded as breeding near Troy, N. Y., in 1881 (Park, *Bull. N. O. C.*, VI, 1881, p. 177). Its first recorded breeding in New England was at Cornwall, Vt., in June, 1889 (C. H. Parkhill, O. & O., XIV, 1889, p. 87). In 1890 specimens were secured in the breeding season in Williamstown and North Adams, Mass., by Mr. Walter Faxon (Faxon, *Auk*, IX, 1892, p. 202), and a nest and eggs were found near Pittsfield by Mr. C. H. Buckingham July 10, 1892 (Brewster, *Auk*, XI, 1894, p. 326).

¹ C. W. Townsend: *Auk*, vol. 21, p. 81, 1904.

In 1801 it was observed in June and July at Franconia, N. H. (Faxon, *Auk*, IX, 1805, p. 202). The foregoing records are from Faxon and Hoffmann on 'The Birds of Berkshire,' 1000, p. 138. They state that the bird is a 'rare summer resident at Williamstown, North Adams, Lanesboro, Pittsfield.'

In 1800 the bird was found breeding as far east as Hubbardston in Worcester County, Mass., Mr. Frederick Cunningham, Jr., in July of that year 'finding a nest with eggs from which the young were safely reared' (Howe & Allen, 'The Birds of Mass.,' 1001, p. 81)."

Since then there have been several more records for New Hampshire as well as a number for its breeding in Maine. Dr. G. M. Allen¹ states that "as far as at present known, therefore, the Prairie Horned Lark summers in New Hampshire in small numbers on the fallow and pasture lands to the west and north of the White Mountain Region."

In Maine there have been a number of breeding records for which I am indebted to Mr. J. Merton Swain. A pair was seen near Andover in that State on August 12th, 1800, by A. H. Norton.² On June 26th, 1900, Mr. Swain³ heard the notes of *Chonoris* between Fairfield and Canaan, and three weeks later he saw a small flock and procured one adult female and two young. On April 23d, 1001, the same observer saw a pair building their nest near Fairfield, Maine. This pair laid four eggs.⁴ The same year he saw a pair in Pittsfield and a pair near Hartland, and he states that several pairs have since nested along the Kennebec near Fairfield every year. He has also observed them breeding near Belgrade Lakes, Liberty, South China, Burnham, Unity, and Livermore.⁵ He also observed them nesting between Guilford and Sangerville, and near Farmington, and more lately near North Anson, Madison, Skowhegan, and Norridgewock.

Mr. Ora W. Knight writes me that Mr. Wallace Homer of Monson, Maine, found the Prairie Horned Lark nesting there in 1904, and that he himself found it at Bangor and Presque Isle under circumstances which indicated that it was breeding. It is evident that the Prairie Horned Lark has come to stay, and it will be an interesting addition to our avifauna.

I have lately heard from several residents of Haverhill that a pair of Horned Larks, evidently *pennsylvanicus* as I judge from a careful description written by Mr. Stanley D. Gray, has frequented some golf links on a hill near that city every summer since 1900. Mr. Gray writes under date of February 7th, 1904, that

¹ G. M. Allen: *Proc. Manchester Inst. Arts and Sci.*, vol. 4, p. 122, 1903 [=1004].

² A. H. Norton: *Journ. Maine Orn. Soc.*, vol. 2, p. 2, 1899.

³ J. M. Swain: *Auk*, vol. 17, p. 387, 1000.

⁴ J. M. Swain: *Journ. Maine Orn. Soc.*, vol. 3, p. 30, 1901.

⁵ J. M. Swain: *Journ. Maine Orn. Soc.*, vol. 6, p. 40, 1004.

the bird "is very tame at times, — have seen it in the center of a ring of people surrounding it at a distance of perhaps fifteen feet. Is less tame as the season advances. Have never seen it elsewhere than on Great Hill, Haverhill, where I have watched it for the past four years."

On October 26th, 1899, Mr. R. H. Howe, Jr. shot a male at Ipswich on which he says: "Although nearest *praticola* this specimen seems almost intermediate between that race and *arvicola*, but this may be merely a case of individual variation."¹

195 [477] *Cyanocitta cristata* (Linn.).

BLUE JAY.

Common permanent resident.

Eggs: May 24 to June 15.

During the migrations in May and September, this bird is most abundant, and is rarely seen near the shore at Ipswich except at these times. I once found, in October, a Blue Jay pecking violently at a Downy Woodpecker which was nearly dead, being much bruised and bloody about the neck and head. The Blue Jay is indeed a handsome rascal.

196 [484] *Perisoreus canadensis* (Linn.).

CANADA JAY.

Accidental visitor from the north.

There is only one record² of this bird for Essex County: a bird taken at Salem on October 25th, 1878, by Lorenzo A. Smith. The specimen is now in the Peabody Academy. Howe and Allen give only two other records for the State: one seen by Mr. Maynard at Newtonville, in 1875, the other shot at Woburn on October 17th, 1889, by Mr. F. B. Winship.

¹ R. H. Howe, Jr. and G. M. Allen: The Birds of Massachusetts, p. 51, 1901; also R. H. Howe, Jr.: Auk, vol. 17, p. 175, 1900.

² Wm. Brewster, ed.: Minot's Land-birds and Game-birds of New England, p. 474, 1895.

[486a] *Corvus corax principalis* Ridgw. NORTHERN AMERICAN RAVEN. While the much persecuted Crow thrives in this thickly populated County, the Raven, common no doubt at the first settlement, and frequently mentioned by the writers of those times, has long since retired to less frequented spots.¹

197 [488] *Corvus brachyrhynchos* C. L. Brehm.

AMERICAN CROW.

Abundant permanent resident, most numerous in winter on the coast.

Eggs: April 15 to June 13.

The most interesting time of year to study the Crow on the seashore is in the winter. Common as they are everywhere in summer, in winter their numbers on the coast are much increased, while inland they become comparatively uncommon. This is due to the fact that more food is to be found in the vicinity of the sea than in the frost-bound country. The nature of this food is easily studied by the examination of the pellets ejected from the mouths of the Crows. These pellets are to be found everywhere, but especially in the regions where the Crows spend the nights.

Standing on an elevation in the neighborhood of the bogs and pine thickets of the Ipswich dunes in midwinter one may see before sunset the Crows streaming in from all sides, singly or in bunches of five or ten. Their flight is directly towards their goal, the pines, around which they frequently circle before alighting. The great majority of the Crows, however, continue on over the sand dunes to the pine thickets on Cape Ann in the neighborhood of Annisquam and Lanesville. Their flight in this direction begins even as early as 2 P. M., in January and continues till sunset. I have been on the south side of the Cape in winter and seen Crows coming from the south drop into the pines for their night's rest.

In the morning from the same station in the Ipswich dunes, one may see the Crows flying out from their night roosts, starting from half an hour to an hour before sunrise. They fly singly and in groups of from ten to thirty, and by sunrise the roosts are generally deserted. Three streams of Crows can be made out. One passes out from the dunes to the beach along which the birds scatter to feed, although the greater part continue on their way up the beach passing Castle Hill and spread out in the great marshes of the Ipswich and

¹ J. A. Allen: Bull. Nuttall Orn. Club, vol. 1, p. 53, 1876.

Plum Island Rivers. Another and smaller stream beats its way slowly over the sand dunes, keeping constantly on the lookout for forage, to the thickets of Castle Hill. The third stream spreads out to the westward over the marshes of the Essex and the Castle Neck Rivers, many continuing on between the hills over the canal which connects the waters of the Essex and the Ipswich Rivers. These early morning flights are less direct than are the return flights at night, for the birds are evidently hungry and on the lookout for food. Those that are bound for a distance, however, fly nearly straight and at a considerable height, unless the wind is strong. The gunner, concealed in his blind in the marshes on the lookout for Ducks, often measures the efficacy of his blind by observing the distance at which the wary Crow sheers off.

The winter roosts of the Crows at favorable places along the coast of Essex County, as in the Ipswich dunes, the pine thickets of Cape Ann, and the Essex and Gloucester pine woods, are of course of insignificant size when compared with the roosts farther south, between latitude 35° and 40° N., in New Jersey, Pennsylvania, Maryland, and the District of Columbia,¹ where sometimes 300,000 Crows gather together. It is difficult to estimate the numbers of Crows that spend the nights in the Ipswich dunes in winter, and the numbers vary greatly, but from various observations I should judge that there were often not far from 500 birds. At Annisquam and Gloucester the numbers reach into the thousands.

Although the Crows generally roost in the thickets of pitch pine, of which there are two of some acres in extent in the sand dunes, on several occasions I have found the freshly fallen snow trampled down in the lee of the bushes, and showing evidence of the birds having passed the night there, crowded together. The bushes themselves as well as the neighboring pine trees were covered with snow, not displaced as it would be if the Crows had roosted among them. There is one place in the dunes about four acres in extent where there are no trees and but few bushes. Here, in winter, Crows' pellets are always numerous.

The Crows, even within the radius of a few miles, do not all roost in the same place, and they change the roost with varying conditions. There is a small patch of white pines and a few cedars on the southerly side of Heartbreak Hill, Ipswich, where the trees are crowded together over a space of only about half an acre. To this grove the Crows gather from all sides in winter, beginning to come in an hour or more before sunset. They swing around rapidly so as to head up into the wind just to the leeward of the grove, and then gracefully

¹ W. B. Barrows and E. A. Schwarz: The Common Crow of the United States, Bull. no. 6, U. S. Dept. Agriculture, Div. of Orn. and Mamm., 1895; see also C. L. Edwards: Winter Roosting Colonies of Crows, Amer. Journ. of Psychol., vol. 1, p. 436, 1888.

dropping down by tipping first to one side and then to the other, they all alight in the pines or in the adjoining hickory trees. Silently they sit in the hickory trees, twenty or thirty together, and then one by one dive swiftly into the pines for the night.

One beautiful winter evening in late January, I remained quietly in this grove of pines and saw the Crows drop in to the trees above me. Although they made no cawing, except once when disturbed by my presence, scraps of conversational tones could be heard from time to time. Frightened away just after sunset they refused to return, although I waited until it was nearly dark, so they must have adapted themselves to another roost for that night. There were perhaps 150 Crows in all.

While the birds are so abundant among the salt marshes and on the shore in the winter, a few miles back in the country one may count only fifteen or twenty Crows in the course of a day's tramp. The reason as before stated is of course the greater abundance of food exposed by the sea and its comparative scarcity in country covered with snow and ice.

The pellets ejected by the Crows are to be found at all seasons, but in summer they soon crumble and lose their identity. In winter they retain their form in a frozen condition, and moreover are very noticeable objects on the snow as well as on the white sand. The pellets are from 1 inch to $2\frac{1}{4}$ inches long by $\frac{1}{2}$ to $\frac{3}{4}$ of an inch broad, tapering to rounded points at both ends, and weighing when dried, from 1 to 3 drachms each. In a group of 16 pellets collected on February 15th, 1903, the following contents were identified: 925 bayberries (*Myrica carolinensis*), a few with the waxy coat still on, some partly denuded, but the majority entirely denuded of the waxy coat, and a few split open or with holes in the end. It is evident that the Crow is therefore a large planter of bayberries, as most of these seeds were viable. Also 113 cranberries (*Vaccinium macrocarpon*), many whole, many merely the skins, and many in small fragments so that the exact number of berries is difficult to estimate; numerous cranberry seeds; 14 staghorn sumach seeds (*Rhus typhina*); 7 poison sumach seeds (*Rhus venenata*); 36 smooth sumach seeds (*Rhus glabra*); 2 bones of a small mammal; 58 intact shells of *Melampus lineatus*, a gastropod very common in the salt marshes; 18 broken shells of *Melampus*; 5 intact shells of a periwinkle (*Litorina rudis*), and one broken shell of the same; 2 intact valves of a small specimen of mussel (*Mytilus edulis*), besides numerous broken pieces of shells of *Melampus*, *Mya*, *Mytilus*, and *Litorina*; 21 opercula of gastropods (*Polinices heros*?), and a few fragments of crabs (*Cancer irroratus*). One pellet found on this same date contained 4 specimens of *Melampus lineatus*, 49 bayberries, 10 cranberries, sand, and fragments of shells. Where the mollusc shells were intact, the partly dried and shriveled animal contents were inside. The vora-

cious appetite of the Crow evidently leads it to eat a great deal and to eject much of this before obtaining the full food value. This is shown especially in the condition of the berries, for even cranberries are sometimes ejected entire.

Another pellet found on March 29th, 1903, seemed entirely made up of staghorn sumach seeds, being red and fuzzy. It contained 162 staghorn sumach seeds, 28 seeds of bayberries, and 4 fragments of *Litorina* shells.

A pellet found on May 11th, 1903, contained bones and hair of a small mammal, 18 bayberry seeds, 3 large unidentified seeds, and a good-sized pebble. Another pellet contained legs of a rock crab as well as seeds. On May 3d, 1903, a pellet was found containing 17 gastropod opercula. Another contained bones and skin of a frog and 26 bayberry seeds. Another was made up almost entirely of crushed and broken remains of large June beetles, with one shell of *M. lineatus*. Pellets like the last are not uncommon in July and August.

On May 24th, 1903, a pellet was found that contained several entire cranberries. At this season of the year the edges of the flooded cranberry bogs are fringed with last year's cranberries floating up onto the sand. Another pellet contained fish bones and scales, a few bayberry seeds, some small marsh gastropods, and frog bones — a delightfully varied diet. There are very few pellets that do not contain bayberry seeds and at least one specimen of *Melampus lineatus*. On June 4th, 1903, a pellet was found containing a few oats, frog bones, and some brilliant green beetles. Another pellet, found in June, consisted entirely of cherry stones, and one in September of grape seeds with the exception of one small mollusc.

Crows are often to be seen devouring fish or other carrion thrown up on the beach. A Black-bellied Plover shot by my brother and left where it fell on a sand spit at Ipswich, while he went after others, was found on his return, half an hour later, to be picked nearly clean of flesh by four Crows. The sand dunes and the rocks and fields all along the coast are sown with crabs, clams, sea urchins, sea snails, whelks, mussels, and razor shells. Many of these are brought by Herring Gulls, but as many more probably by the Crows who carry them back from the shore. Both of these birds may be seen dropping their prey from a height in order to break the shells on the hard surface of the ground.

In the sand as in snow, the tell-tale tracks show what has happened. Thus, in late May, the shell of a Red-winged Blackbird's egg and Crow tracks on the bare sand easily explained the enmity of the Blackbird towards the Crow. The Red-wings nest in large numbers among the bogs of the sand dunes and are frequently to be seen chasing the Crows away from their haunts.

The Crow is either a saint or a sinner depending upon the point of view.

In the latter capacity he is certainly held by Red-winged Blackbirds and Kingbirds, while in the former category he must place himself, when with virtuous clamor he attacks a wandering Eagle, a Snowy Owl, or a sly fox. Hearing a great outcry among a party of Crows one day at Ipswich, I saw several swooping down to within a few feet of a fox. Reynard seemed not a whit disturbed, and carried his brush straight out behind as he sauntered along. When Crows pursue an Eagle they bear about the same relation to the latter bird in size that the Kingbird bears to the Crow. I have heard them make a virtuous outcry over a couple of innocent hares that were running through the dunes.

Tracks show that it is a common habit for the Crows to drag their middle toe in walking and sometimes all three front toes are dragged. Again, tracks of the same or other Crows show that the toes are lifted up without any dragging. I have seen Crows hop, and have found evidence of that in the sand. In landing from the air, their tracks show it is often their habit, to bound or hop forward once with feet together, before beginning to walk. I have seen the marks in fresh snow showing that a Crow had slipped in walking, and spread out its right wing to save itself.

It is probable that all birds may act the Flycatcher at times although this seems out of place in the Crow. On one occasion, however, I saw a Crow launch himself from a tree, hover in the air, and return to his perch in true flycatcher style. I once saw a Crow at Magnolia splash on the surface of the ocean like a Kingfisher. Whether he succeeded in catching a fish or not I do not know. Crows often walk in the water on the edge of the beaches, picking up food, but always take good care to get out of the way when the waves roll in, — they are not quite web-footed.

In the autumn of 1901, a creamy white Crow was reported at Topsfield. He was of course at once marked for destruction by the local gunners. There is a partially albino Crow in the collection of the Peabody Academy.

Near the shore at Ipswich, Crows are hard put to it to find good-sized trees for their nests. I have frequently found the nests in apple trees, and nests in quite small trees in the bogs of the dunes are common. One I measured was only nine feet from the ground in a small pitch pine.

Crows begin to gather in flocks very early in the year. Thus I have counted 35 in a flock on May 11th, 40 in a flock on May 30th, and on July 10th, on the barren pastures of Great Neck, Ipswich, about 150.

The winter of 1903-4 will long be remembered as one of severe cold and frequent snow storms. The marshes and creeks were completely covered with thick ice, with scarcely a crack through which the water or the marsh could be seen. Many of the bayberry bushes were entirely covered with snow and cranberries were not to be thought of. Under these circumstances the struggle

for existence became severe among the Crows and it would be supposed that many would migrate southward. However this may have been, it is certain that many stayed here, and that some died of starvation. Every crack and every opening in marsh and creek was sought by the hungry Crows. In Lynn Harbor, in Beverly Back River, at the mouth of the Essex and Ipswich Rivers, Crows could be seen in numbers standing on the edge of ice cakes, and along openings in the ice, picking up scraps from the surface of the water and perhaps occasionally catching a fish. The contrast between them and the snowy Herring Gulls with whom they consorted on the ice was very striking. As a rule the Gulls and the Crows paid no attention to one another, but a hungry Crow, attempting to take a fish away from a Herring Gull was scolded by the latter in such a threatening manner, that he took to flight.

On February 22d, 1904, I saw a Crow sitting crouched down on a tree. When startled, he flew feebly about thirty feet, and attempting to alight on another tree, nearly fell but managed to pull himself onto his perch. I was given a Crow that was found dead early in March, 1904. The body was greatly emaciated, the intestines nearly empty, and the stomach contained only a husk of oats and a piece of coal ashes. There was no evidence of disease. The bird weighed only ten ounces and was small in every way, — a case of the small and unfit perishing.

Although I failed to find any dead Crows myself, it being the common report that there were many dead Crows in Gloucester, I wrote to a physician there, who sent my note to Mr. M. A. Walton, the "Hermit," who very kindly wrote me the following interesting letter, under date of February 29th, 1904: "I think the number of dead Crows has been greatly exaggerated. In the rear of the Hospital some dead Crows are to be found, not a large number. Quite a few were observed on the ice at Annisquam. I have not observed dead Crows under the pines in my locality. . . . Persons living at Annisquam tell me that a few dead Crows were seen beneath their roosts. I should say that the dead Crows found on the Cape had starved to death."

As to the winter roosting of Crows, he says: "It would be impossible to estimate the number of Crows that winter here. Near my cabin there is a pine growth covering about four acres. I have known this winter, several times when the trees were all densely packed and a large number of Crows had to seek roosts elsewhere. When the clam flats are covered with ice, the Crows leave Ipswich and Annisquam, and seek food on the Dogtown Commons, Bond's Hill, the beaches, and the fish wharves. Once this winter all trees and shrubs were coated with ice. Millions of Crows gathered on Bond's Hill near here. I went up to see what they found to eat. They were knocking the ice off the rose bushes and eating the seed-pods. When the Owls prey on Crows

the latter change the roosting place. Thus they are found roosting in all the woods of Ward Eight," Gloucester.

The farmers of Essex County generally adopt one of three methods to scare the Crows from their cornfields. They either erect scare-crows, figures more or less human in appearance, clad in old clothes and a battered hat; or they run several lines of white string irregularly across the fields from poles; or they shoot two or three Crows and hang their dead bodies to sticks put up in the fields. Another method which often has the desired effect is to scatter corn on the surface of the ground after planting. This is eaten by the Crows and the planted corn is untouched.

198 [494] **Dolichonyx oryzivorus** (Linn.).

BOBOLINK.

Abundant summer resident; May 1 to September 18.

Eggs: June 3.

In the grassy fields of the County, especially in those adjoining the salt marshes, these birds are abundant. They delight to feed in these marshes. I have seen on May 15th, 1904, twelve adult males feeding together in the salt marsh at Ipswich, and seven others in one bush in an adjoining field, several of the latter singing at once. Their delightfully merry song begins to grow less frequent early in July; by the 12th it is rare and generally incomplete, although the males still appear in full plumage. Soon after this, however, their plumage becomes very scrubby as the sober brown suit is gradually taken on. My latest record for a partial song of a Bobolink is of one heard on July 19th. The flocks which begin to form at the end of the first week in July, have mostly departed by the end of August.

A male Bobolink that I kept in a cage during the winter and spring of 1875-76, remained in the brown immature plumage but sang vigorously during April and May.

199 [495] **Molothrus ater** (Bodd.).

COWBIRD.

Common summer resident; March 22 to October 20.

Eggs: May 26 to June 8.

It is always interesting to watch this bird in the fields with its friends, the cows. During September and October it is often found in flocks of considerable size.

200 [498] *Agelaius phœniceus* (Linn.).

RED-WINGED BLACKBIRD.

Abundant summer resident ; March 6 to August 21, October ; average date of arrival for eight years, March 17.

Eggs : May 23 to June 18.

The Red-winged Blackbird is an abundant bird, breeding in all fresh marshes by the rivers and ponds of Essex County. It especially enjoys the bogs among the sand dunes where it breeds, and from there it visits the beach as well as the salt marsh. As a varied conversationalist the Red-winged Blackbird has no equal, and its song always brings up happy memories of spring. As early as July 1st the females and young gather in small scattered flocks, together with a few adult males. By the middle of July the flocks are moderate in size, while by the end of the month they have gone up into the hundreds, composed of females and young, while only a few red-shouldered males are to be seen. I have heard a male sing his *quonk-quer-ree* as late as August 12th, although both adult males and songs are rare at that date. The flocks of young then diminish in size and by the end of August are generally gone. Then ensues a period when Red-winged Blackbirds are rarely seen, but in the latter part of September and in October large flocks of the more northern birds appear.

Their nests among the dunes and near the salt marshes are in bushes large and small, and are frequently made of eel-grass (*Zostera marina*). Maynard¹ says : "I have found the nests on an island in the marshes of Essex River, placed on trees twenty feet from the ground ! In one case, where the nest was placed on a slender sapling fourteen feet high, that swayed with the slightest breeze, the nest was constructed after the manner of our Baltimore Orioles, prettily woven of the bleached sea-weed called eel-grass. . . . It was six inches deep."

During the copious rains of June, 1903, many of the bogs were flooded and many young destroyed, especially in the Topsfield and Wenham marshes.

¹ C. J. Maynard: The Naturalist's Guide, p. 122, 1870.

201 [501] *Sturnella magna* (Linn.).

MEADOWLARK; "MARSH QUAIL."

Very common summer resident, very rare in winter; March 2 to November 26 (December 14, 21, 29, January 2).

Eggs: May 11 to June 28.

My only January record is of a single bird seen on January 2d, 1889, in the Ipswich sand dunes by Mr. Walter Faxon and Mr. Bradford Torrey.

The Meadowlark is especially common in the salt marshes and in the adjoining fields. Its sweet and plaintive song is heard from its first arrival in March, throughout the summer, until it leaves in November. In mild October days it sometimes sings almost as frequently as in May. One never tires of it.

202 [506] *Icterus spurius* (Linn.).

ORCHARD ORIOLE.

Rare and local summer resident; May 17 to August 15.

Eggs: May 28 to June 25.

This is an example of an Upper Austral bird breeding in the Transition zone. I have found a pair spending the summer at Ipswich, in 1895 and in 1896; and in 1902, 1903, and 1904, two pairs have nested there in apple orchards not far from the sea. The neat chestnut and black adult males are very handsome, and their song is ringing and clear, like the glorified song of a Purple Finch. The nest is made of fresh green grass, very skillfully woven, its greenness making it difficult to see among the leaves.

203 [507] *Icterus galbula* (Linn.).

BALTIMORE ORIOLE; "GOLDEN ROBIN."

Abundant summer resident; April 29 to September 13; average date of arrival for eleven years, May 7.

Eggs: May 24 to July 4.

The abundance of American elms with their long swinging branches offers a favorite nesting place for this bird in all the cities and towns of the County. Their preference for the elms is curiously shown by their choosing even the small newly planted trees with short stiff branches, and this, too, when there are plenty of larger trees of other kinds close at hand. In Mr. William Brewster's collection is a double nest, or two nests hung side by side like panniers from the branch. Both are shallow and open above, and each contained four eggs. This curiosity was obtained in 1885, through Mr. M. A. Frazar, from Newburyport.

J. A. Allen¹ speaks of a Baltimore Oriole at Ipswich whose song strikingly resembled that of the Western Meadowlark. Maynard² says: "I have heard a bird of this species that lived among the woods of the islands in Essex River, where man is seldom seen, sing with a louder wilder note than usual, as if it was influenced by the surrounding wildness and its proximity to the sounding sea."

204 [509] **Euphagus carolinus** (Müll.).

RUSTY BLACKBIRD.

Common transient visitor; March 14 to April 30; September 23 to October 24.

[511] **Quiscalus quiscula** (Linn.). PURPLE GRACKLE. It is probable that this species occasionally wanders north with its close relative the Bronzed Grackle, especially during the autumn. Mr. Dearborn³ records that at Tilton, N. H., he shot nine out of a large flock of Grackles on September 13th, 1902. Two of these were of the *quiscula* form, and probably had visited Essex County. As I have no specimens from the County, however, this bird must remain on the doubtful list.

205 [511b] **Quiscalus quiscula æneus** (Ridgw.).

BRONZED GRACKLE; CROW BLACKBIRD.

Abundant summer resident, occasionally winters; March 6 to October (winter); average date of arrival for nine years, March 17.

Eggs: May 7 to June 1.

¹ J. A. Allen: Amer. Nat., vol. 3, p. 509, 1869.

² C. J. Maynard: The Naturalist's Guide, p. 123, 1870.

³ Ned Dearborn: The Birds of Durham and Vicinity, p. 110, 1902.

Three of these birds spent the severe winter of 1903-4 at Wenham and were fed daily by Mr. C. H. Keith.

I have always been fond of these black rascals, but I feel that I am now justified in this fondness, for they have taken to building their nests in towns and cities, and there are hopes that they will diminish the numbers of the English Sparrow.

In the early spring and in autumn are the best times to see the Bronzed Grackle for then he descends upon the land in great flocks. He is particularly fond of the salt marshes, the dunes, and the beaches. On April 24th, 1904, I counted carefully a flock of 225 in the salt marsh at Ipswich, and large flocks are not uncommon. Several times in the fall, flocks of a thousand have been seen, and I estimated that one at Hamilton on October 7th, 1904, contained at least 1500 individuals.

Bronzed Grackles' tracks in the sand dunes show that the birds often drag the middle claw, and occasionally all three front claws, like the Crows. They walk among the pools on the upper beach with tails elevated to keep them out of the water. They are frequently chased by irate Robins whom they have doubtless bereaved. In the vegetable garden they walk sedately between the rows of peas, adroitly picking out the fat ones.

Among the bogs of the dunes their nests are common, generally about eight feet from the ground, in small stunted trees.

206 [514] *Hesperiphona vespertina* (W. Coop.).

EVENING GROSBEEK.

Accidental visitor from the northwest; January 3 to April.

In 1890, there was a remarkable invasion of these birds from the northwest. They arrived early in January, continued in considerable numbers throughout that month and February, and the first week of March, while some lingered through April. There are seven specimens in the Peabody Academy collection, namely: four from Boxford taken in the spring of 1890; two from Swampscott, taken on January 3d, 1890; one from Lynn, taken January 25th, 1890. Rev. William P. Alcott writes me that on January 31st, 1890, he shot one out of a flock of eight at Boxford.

Fourteen years later, on March 23d, 1904, Mr. C. E. Brown¹ found five of this species at Beverly in a willow tree together with some Robins and Rusty

¹ C. E. Brown: Auk, vol. 21, p. 385, 1904.

Blackbirds. He shot an adult male and female and a young male. One of these is in the collection of Mr. J. E. Thayer, the other two, through the kindness of Mr. Thayer, are now in the collection of the Boston Society of Natural History.

207 [515] *Pinicola enucleator leucura* (Müll.).

PINE GROSBEAK.

Irregular and at times abundant winter visitor; October 27 to March.

I have found records of the occurrence of the Pine Grosbeak in Essex County for the following years: 1855, 1866-67, 1868-69, 1874, 1876, 1887, 1890, 1892-93, and 1903-4. Mr. Brewster¹ has described the great flight of 1892-93, when the birds were found in Essex County chiefly during November and December.

In 1903, the Pine Grosbeaks arrived earlier than ever before. On October 27th, Mr. S. M. Noyes observed them at Georgetown; on October 31st my brother, Mr. W. S. Townsend, saw two at Middleton, one of which was in the full red plumage. The earliest date at which this bird had hitherto been noted in Massachusetts is, according to Howe and Allen, November 4th. It is probable that they stayed to the middle or end of March in 1904, as was noted elsewhere, but the latest date I have for the County in this year is February 18th.

Besides their interesting call notes, of which they have several, one may sometimes hear their song. On January 24th, 1904, I heard a full-plumaged male deliver a delightfully sweet and continuous warbling song from the top of a larch on Castle Hill, Ipswich.

208 [517] *Carpodacus purpureus* (Gmel.).

PURPLE FINCH.

Permanent resident, common in summer, rare in winter; April 1 to October 20; winter.

Eggs: June 8 to June 19.

Although most of the brown plumaged birds of this species in song are immature males, it is a fact that the female occasionally sings. Many years ago

¹ Wm. Brewster: Auk, vol. 12, p. 245, 1895.

at Magnolia I shot on two different occasions, a singing bird, and found on dissection that both were females. I noted that their songs were less complete than those of the male.

209 [521] *Loxia curvirostra minor* (Brehm).

AMERICAN CROSSBILL; RED CROSSBILL.

Irregular visitor at all seasons, generally in winter; November to April (July 12).

This is the Crossbill that is more often seen. I have records for the County for the years 1855, 1862-63, 1864, 1868-69, 1874, 1878, 1880, 1888, 1896, 1899-1900, 1903. The only summer record is of a bird seen by Mr. Walter Faxon and myself on July 12th, 1903, flying over the Ipswich dunes. On November 22d, 1903, I found a flock of a dozen in one of the groves of pitch pines in the Ipswich dunes.

210 [522] *Loxia leucoptera* Gmel.

WHITE-WINGED CROSSBILL.

Irregular but at times common winter visitor; November 20 to April.

Nuttall¹ says: "About two years since [1830] they were seen in large, gregarious, famished flocks, near Newburyport, and other neighboring towns in the vicinity of the sea-coast." Putnam² records that they were very abundant in December and January, 1854 and 1855. Maynard³ in the Naturalist's Guide, says it was "common during the winter of 1868-69. . . . December 3d it was found at Ipswich, Massachusetts, where it feeds upon the seeds of the beach-grass. . . . It remained until late in April." It also occurred in 1881-82, and in 1889-90.

In 1899-1900 it was very common throughout the County, and I found it especially so among the Ipswich dunes. Here, as Mr. Maynard had observed thirty-one years before, it fed on the seeds of the beach-grass. The birds were generally rather wild, but in the pine thickets they allowed a close approach.

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 540, 1832.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 212, 1856.

³ C. J. Maynard: The Naturalist's Guide, p. 111, 1870.

211 [527a] *Acanthis hornemannii exilipes* (Coues).

HOARY REDPOLL.

Very rare winter visitor.

There is only one record for this bird: a male taken at Swampscott, on November 16th, 1878, by Mr. W. A. Jeffries.¹

212 [528] *Acanthis linaria* (Linn.).

REDPOLL.

Irregular and at times abundant winter visitor; November 9 to April 25.

I have records of its occurrence in 1859-60, 1866-67, 1868-69, 1874, 1878, 1883, 1888, 1899-1900.

213 [528a] *Acanthis linaria holbœllii* (Brehm).

HOLBELL'S REDPOLL.

Very rare winter visitor.

Two were shot at Swampscott on March 26th, 1883, by Mr. William Brewster,² and are now in his collection. He states that he knows of only one other Massachusetts specimen, a bird shot in Lexington, March 10th, 1890, by Mr. Walter Faxon.

214 [528b] *Acanthis linaria rostrata* (Coues).

GREATER REDPOLL.

Irregular and at times common winter visitor.

I shot two Redpolls from a flock of eight or ten, feeding on weed seeds in

¹ W. A. Jeffries: Bull. Nuttall Orn. Club, vol. 4, p. 121, 1879.

² Wm. Brewster, ed.: Minot's Land-birds and Game-birds of New England, p. 472, 1895.

a field at Ipswich on February 25th, 1900, that proved to be of this race. They were kindly identified by Mr. William Brewster, and are now in my collection. Mr. Brewster says¹: "In February, 1883, it occurred along the seacoast near Boston in positive abundance. On the 19th of this month Mr. Spelman and I took thirteen specimens at Revere Beach [adjoining Lynn] in about two hours, and on the 22d, at Nantasket Beach, two young collectors, by a few random shots into an exceptionally large mixed flock of Redpolls, secured forty specimens, of which six proved to be *A. linaria*, and thirty-four *rostrata*."

215 [529] **Astragalinus tristis** (Linn.).

AMERICAN GOLDFINCH; YELLOW-BIRD.

Permanent resident, abundant in summer, not uncommon in winter.

Eggs: July to August 11.

At sunset of a winter's day, late in January, I found one of these birds anxiously flitting about a small pine grove on Heartbreak Hill, alighting at the bases of the trees, and finally popping into a hole about a foot deep in the snow under a stump. Frightened from there, it flew about nervously for a few minutes, but at last returned to the same hole close beside which I was sitting motionless. As it was so nearly dark, I had not been sure of the bird's identity, so I tried to catch it in my hat, but it escaped. It finally cuddled into the protected side of a footprint in the snow, and was there easily captured by my companion. It was evident that the Goldfinch had been searching for a protected hole in which to pass the night,—a safe place in that region as the snow showed no marks of prowling animals. I have recorded this, for observations on the sleeping habits of birds are few.

216 [533] **Spinus pinus** (Wils.).

PINE SISKIN; PINE FINCH.

Irregular and at times abundant winter visitor; October 22 to April 5.

Putnam² records these birds as present in small numbers in 1854. Maynard,

¹ Wm. Brewster, ed.: *Minot's Land-birds and Game-birds of New England*, p. 472, 1895.

² F. W. Putnam: *Proc. Essex Inst.*, vol. 1, p. 211, 1856.

in his Naturalist's Guide (p. 110) says they were very numerous in the winter of 1859-60, and quite common in 1868-69. Other years for which I have records from various sources, are 1862, 1876, 1878, 1888, 1891, 1896, and 1899.

217 [534] *Passerina nivalis* (Linn.).

SNOW BUNTING; SNOWFLAKE.

Abundant winter visitor; most common in November, December, and January, less common in February and March; October 12 to April 3.

This bird of the snow appears suddenly the last of October and is to be found in flocks, small and large, but even when most abundant, the flocks rarely number at the present day over two hundred individuals. In the late sixties they were evidently much more common, for Mr. Maynard tells me that they occurred by thousands. In his Naturalist's Guide (p. 112) he says: "I have seen thousands rise at the report of my gun on the Ipswich sand-hills, where it feeds upon the seeds of the beach-grass." The cause of this great reduction in numbers is easily understood when we read that "very recently nearly 80,000 Snow Buntings were found by a State game warden in a cold storage house in one of the larger eastern cities, and were identified by a trained ornithologist."¹ As far as I have observed there is very little shooting of these birds done on our coast now, but they are as a rule very shy.

Snow Buntings are found by themselves, or associated with Horned Larks or Lapland Longspurs. I have often seen all three of these species feeding together in the beach-grass of the dunes, and with them an occasional Ipswich Sparrow. Not only do they frequent the dunes, but they are often to be found on the beaches, on the neighboring hills and pastures, and occasionally in the salt marshes, although they are not so much at home there as the Horned Larks. On the beach, however, they are more common than the latter. They also frequent dooryards to pick up scraps, and they often alight on the buildings, stone walls, and fences about these places. On the ground they run and walk rapidly, but occasionally hop, which the Horned Lark never does. Unlike the Lark also, they alight on the large seed-spears of the beach-grass to get the seeds. They also pick at them from the ground.

On the beaches in winter Snow Buntings take the place of Sandpipers,

¹ Wm. Dutcher: Auk, vol. 20, p. 107, 1903.

and I have seen them follow the edge of the wave, hurriedly receding like Sandpipers before its advance. Their short legs and long tails give them of course an entirely different appearance. On November 1st, 1903, I found a flock of American Dunlins and a flock of Snow Buntings feeding together on the beach, both getting up and flying off together, although each species kept by itself.

One cannot watch a flock of these white birds, fitfully rising together and whirling about, without being reminded of the driving flakes of snow. I must object, however, to the modern ambiguous name of "Snowflake" for this bird, because when one speaks of seeing in our changeable winter weather a dozen snowflakes, even an ornithologist may be in doubt whether birds are referred to or not. The good old name Snow Bunting seems to me far better, for then there is no ambiguity, and the name Bunting fits well the bird's stout form.

The notes of the Snow Bunting are frequently emitted when flying and also occasionally from the ground. They consist of a sweet single or double whistling note, and a characteristic melodious trill, which often follows the single notes. At times, especially when the birds are chasing each other, they give forth a rasping *tsee*. I have several times heard this bird's notes in winter in the early morning when it was still too dark to distinguish colors. Thus on December 6th, 1903, the birds were flying about, feeding and calling at 6.20 A. M.; the first Crow did not call until 6.30 and the Chickadees and a Red-bellied Nuthatch were not to be heard until 6.50. Sunrise was at 7.01. This habit of early feeding while it is still dark may perhaps be acquired in the short days of the far north.

Snow Buntings are easily distinguished by their arctic plumage. The white of the secondaries is especially noticeable in flight, while the white wing coverts are prominent when the birds are on the ground. The wearing off of the brown feather-tips — the veiling — makes the spring birds beautifully black and white, while the early arrivals in the autumn are often quite brown.

218 [536] *Calcarius lapponicus* (Linn.).

LAPLAND LONGSPUR.

Winter visitor, common in the autumn and early winter, very rare in late winter and spring; October 9 to May 1.

Whether the habits of this bird are changing or not I cannot say, but the above description, applicable to-day, is very different from the one based on observations of former years. Thus Mr. Maynard tells me that in the years

1867 to 1872 he used to find this bird common up to November 16th; after this it grew scarce and was gone by December 1st. It was never found in winter, and only once did he find it in the spring, and then a single bird. Mr. Brewster¹ calls it "an early spring and late autumn migrant, and occasionally winter resident, rare in most parts of New England, but regularly common at Ipswich, Massachusetts, in November."

Since 1898, I have found the Longspur in December at Ipswich and have found them common in that month nearly every year since. In 1902 and 1904, I found them common in January. On January 12th, 1902, Mr. H. M. Spelman, Mr. R. S. Eustis, and I found between forty and fifty of these birds at Ipswich.² Four or five were on a hillside about half a mile from the beach, and the remainder among the sand dunes by the sea. On January 18th following, Mr. R. H. Howe, Jr., and Mr. L. A. Shaw saw six or seven Longspurs at Ipswich,³ and on January 26th, Dr. A. L. Reagh and Mr. Shaw saw about thirty at Great Neck, Ipswich. In the severe winter of 1904, I found about twelve Longspurs on January 4th, on Castle Hill, at Ipswich, and Mr. Hoffmann and I found six on January 24th, at Ipswich. That same winter four birds of this species stayed until March 4th. They remained under somewhat artificial circumstances as they were fed daily near the town of Ipswich among a flock of Snow Buntings and Horned Larks. This interesting record was given me by Miss Sarah E. Lakeman, who with several other Ipswich bird-students observed the birds closely, and made an accurate and unmistakable drawing of one of the Longspurs. Besides this spring record I have been able to obtain only two others. One is of a male in fine spring plumage, and is now in the collection of the Boston Society of Natural History, labeled Swampscott, May 1st, 1877.⁴ The other is recorded by Mr. Maynard⁵ who states that he once obtained a single straggler at Ipswich, in April. Another spring specimen was taken just outside the limits of the County at Revere Beach on March 10th, 1884, by A. M. Tufts, and is now in the mounted collection of Mr. William Brewster. In order to show as exactly as possible the numerical standing of the Lapland Longspur in different months, I give here the following census of this bird as found at Ipswich by several observers as well as by myself during the last eleven years. The earliest October record was made by Mr. Walter Faxon. October 9, 1897, 3; October 12, 1895, 5; October 16, 1904, 2; October 20, 1894, 40; October 22, 1901, 3; October 23, 1902, 10; October 24, 1893, 2;

¹ Wm. Brewster, ed.: *Minot's Land-birds and Game-birds of New England*, p. 194, 3d ed., 1903.

² C. W. Townsend: *Auk*, vol. 19, p. 202, 1902.

³ G. M. Allen: *Auk*, vol. 19, p. 202, 1902.

⁴ T. M. Brewer: *Proc. Boston Soc. Nat. Hist.*, vol. 19, p. 257, 1878.

⁵ C. J. Maynard: *Handbook of the Sparrows, Finches, etc., of New England*, p. 39, 1896.

October 25, 1904, 5; October 26, 1899, 2; October 27, 1893, 12; October 28, 1894, 35; October 30, 1904, 5; October 31, 1893, 6; November 2, 1893, 10; November 3, 1893, 12; November 3, 1898, 4; November 20, 1904, 2; November 22, 1903, 2; November 29, 1901, 20; December 7, 1903, 20; December 8, 1901, 30; December 9, 1898, 10; December 28, 1902, 25; January 4, 1904, 15; January 12, 1902, 50; January 18, 1902, 7; January 24, 1904, 6; January 26, 1902, 30.

Lapland Longspurs, although occasionally found by themselves, are more apt to be associated with Horned Larks or Snow Buntings. Flying and feeding with these birds, they generally keep together, however, in one part of the flock, although a few scattered birds are not uncommon. They frequent the dunes at Ipswich and the neighboring hills by the sea, particularly those at Great Neck and Eagle Hill. They occasionally visit the beach and the salt marshes. They have also been found at times at Swampscott and Marblehead.

Longspurs are often difficult to find. Thus on December 6th, 1903, I searched the Ipswich dunes from one end to the other and the sides of Hog Island, yet, although Snow Buntings, Horned Larks, and Ipswich Sparrows were common, none of the Longspurs could be found. Early next morning I discovered a flock of twenty of these birds with a large flock of Horned Larks feeding on the hillside close to my house, within a mile of the beach. The Longspurs like the Larks are walkers, not hoppers, but unlike the Larks, they frequently alight on the fruiting spears of beach-grass to obtain the seeds. I have sometimes approached within a few feet of birds thus engaged. Their notes are various. The sweet single and double notes suggest those of the Snow Bunting, but they are slightly sibilant, while the Bunting's notes are whistled. Instead of the charming trilling of the latter bird, the Longspur emits a hoarse rattle or *chirr*, which is generally sounded as it starts to fly.

Their small size, more slender form, and dark appearance distinguish the Lapland Longspur from both Snow Buntings and Horned Larks. When observed at close range on the ground, two parallel buff streaks are to be seen on their backs.

Just as this goes to press I am informed by Mr. H. W. Wright that on February 23d, 1905, he saw a flock of twenty-four Lapland Longspurs at Marblehead Neck.

219 [538] *Calcarius ornatus* (Townsend).

CHESTNUT-COLLARED LONGSPUR.

Accidental visitor from the west.

There is only one record for the County and this, too, is the sole record for the State, namely, of an adult male shot by me at Magnolia on July 28th, 1876.¹ The bird was found in a grass field about half a mile from the sea, and his white-marked tail and peculiar notes while flying were recorded at the time. The specimen was presented by me to the Boston Society of Natural History in whose mounted collection it now is. The bird was in very worn plumage. This was the first instance of its capture east of Kansas. The only other record of its capture in New England is of one taken at Scarboro, Maine, on August 13th, 1886, by my near neighbor at Ipswich Dr. J. L. Goodale.²

[539] *Rhynchophanes mccownii* (Lawr.). MCCOWN'S LONGSPUR. This bird was recorded from Ipswich, January 7th, 1877, by Maynard³ on the basis of a specimen bought by Messrs. E. A. and O. Bangs in the Boston Market and said to have been shot at Ipswich. There is no evidence, however, that it came from Essex County, and it is not given among the authenticated birds of the State in the Howe and Allen list (p. 127).

220 [540] *Poœcetes gramineus* (Gmel.).

VESPER SPARROW; BAY-WINGED BUNTING; GRASS FINCH.

Abundant summer resident; March 27 to October 24 (November 9).

Eggs: May 14 to June 10.

The late November record was of a bird seen at Swampscott on November 9th, 1878, by J. A. Jeffries.

This delightful singer is very common in the open farming regions of Essex County, and pours forth its song from some favorite perch on post or building day after day. The bird runs as well as hops, and occasionally it scratches vigorously like the Fox Sparrow and others. It is common enough to see one parent acting the part of a wounded bird to draw off the intruder from the young,

¹ T. M. Brewer: Bull. Nuttall Orn. Club, vol. 2, p. 78, 1877.

² J. L. Goodale: Auk, vol. 4, p. 77, 1887.

³ C. J. Maynard: Birds of Eastern North America, p. 516, 1889.

but on one occasion, both parents of a young Vesper Sparrow performed in this manner for my benefit.

221 [541] *Passerculus princeps* Maynard.

IPSWICH SPARROW.

Winter visitor, locally common and at times abundant in autumn and early winter, very rare in late winter, and uncommon in the spring; October 12 to April 12.

The above description of the prevalence of this bird is the result of a careful census of observations at Ipswich for the last six years. A few birds arrive in October, but they do not become common until November. In the latter half of this month and throughout December they are often very common, and I have recorded as many as twenty-five or thirty in one day. Contrary to the statement of most writers, I have found the birds common up to the end of December. In January, they fall off in numbers, and after the first week, one is fortunate to find more than one or two, although I have recorded six for the 24th, and that, too, in the severe winter of 1904. In February, they are indeed very rare and I have only two recorded for that month, one of which was taken by me on February 5th, 1899. In March, the spring flight begins about the 15th, and in the last week of that month and in the first four or five days of April, perhaps half a dozen may be found in one day. They are certainly far less common then than in the autumn migrations. My earliest date, October 12th, is one given by Bradford Torrey¹ in the Clerk of the Woods, the bird being seen in 1900. My latest date, April 12th, is of a bird seen at Ipswich in 1902, by Mr. H. W. Wright.

On the late date, April 10th, I have three records from Ipswich: a bird in Mr. Brewster's collection taken April 10th, 1874; one seen by Mr. Torrey and spoken of in a letter from him; and a third bird seen by myself and taken on April 10th, 1904.² The last bird was a female and very fat, as is usually the case with spring specimens.

The following is the list or census of Ipswich Sparrows observed at Ipswich: October 19, 1902, 1; October 23, 1904, 12; October 26, 1892, 1; October 26, 1901, 1; October 28, 1894, 1; October 30, 1904, 12; November 1, 1903, 3; November 3, 1901, 12; November 20, 1904, 5; November 22,

¹ Bradford Torrey: The Clerk of the Woods, p. 102, 1903.

² Dr. A. L. Reagh shot a male at Plymouth, Mass., on the late date of April 20th, in 1903 (reported at a meeting of the Nuttall Ornithological Club, May, 1903).

1903, 30; December 6, 1903, 30; December 8, 1902, 10; December 9, 1900, 1; December 28, 1902, 25; January 4, 1904, 6; January 21, 1894, 1; January 24, 1904, 6; January 25, 1905, 0; February 5, 1899, 2; February 15, 1900, 0; February 22, 1903, 0; February 25, 1900, 0; March 10, 1901, 10; March 15, 1899, 6; March 20, 1880, 2; March 22, 1891, 4; March 22, 1878, 7; March 24, 1884, 8; March 25, 1893, 1; March 27, 1880, 5; March 30, 1893, 2; March 30, 1901, 1; March 30, 1883, 6; March 31, 1902, 3; April 1, 1885, 2; April 1, 1884, 3; April 3, 1879, 3; April 4, 1903, 3; April 5, 1903, 2; April 6, 1885, 3; April 10, 1904, 1.

To Mr. C. J. Maynard belongs the honor of the discovery of this interesting bird, which was through a mistake of Prof. Baird's first believed to be Baird's Sparrow (*Coturniculus bairdii*), of which at that time there was only one faded specimen in existence. The first Ipswich Sparrow was shot by Mr. Maynard on December 4th, 1868, among the Ipswich sand dunes and its discovery as a Baird's Sparrow was announced in the American Naturalist, for December, 1869 (p. 554). In 1870, Mr. Maynard's Naturalist's Guide was published, containing a description of the Ipswich dunes, and of the Sparrow, and with a plate of the bird still appearing under the name of Baird's Sparrow. After two more specimens of this bird were taken in October, 1870, it was discovered that it was a new species, and was named by Maynard in the American Naturalist for October, 1872 (p. 637), "*Passerculus princeps*, the Large Barren-ground Sparrow."

From that time on, *Passerculus princeps*, which took the name of Ipswich Sparrow, has been found with increasing frequency. Although Maynard deserves the full credit for the discovery of this species, it is interesting to think that Wilson, the father of American ornithology, may have shot and figured an Ipswich Sparrow many years previous. Wilson gives two figures of the Savanna Sparrow; one, labeled female, is small and dark, a good likeness of the bird, while the male is large and much lighter colored, strikingly like the Ipswich Sparrow. This resemblance to the Ipswich Sparrow is noticeable not only in the large, colored plates, but also in the smaller uncolored engravings, and it seems to me there can be no doubt but that Wilson actually figured an Ipswich Sparrow. This fact was discovered by Mr. I. Norris De Haven¹ and called to the attention of the Delaware Valley Ornithological Club on January 17th, 1893. Mr. Witmer Stone was so convinced of the truth of this identification that, with Mr. De Haven's permission, he published an article on Alexander Wilson and the Ipswich Sparrow, in The Osprey, for May, 1898 (vol. 2, no. 9, p. 117).

The history of the discovery of the breeding home of the Ipswich Sparrow

¹I. N. De Haven: Abstract of the Proc. Delaware Valley Orn. Club, no. 2, p. 8, 1892-97.

is most interesting. In July, 1884, in *The Auk*, the following note was published by Mr. Robert Ridgway: "The National Museum possesses a considerable series of eggs labelled '*P. savanna*, Sable Island, Nova Scotia, July, 1862; J. P. Dodd' which are uniformly so much larger than those of the Savannah Sparrow as to strongly suggest the probability that they may be in reality those of the Ipswich Sparrow. At any rate the matter is worth investigating, and it is hoped that some reader of '*The Auk*' may be able to decide the question." Dr. C. H. Merriam in the October *Auk* states: "Acting upon the above suggestion I immediately wrote to the Rev. W. A. Des-Brisay, a resident missionary of Sable Island, requesting him to send me a specimen of the common 'Gray Bird' of the Island. This he was kind enough to do, and the specimen, in confirmation of Mr. Ridgway's suspicion, proves to be an unquestionable Ipswich Sparrow."

But it was not until May, 1894, that the matter was definitely settled by the visit of Dr. Jonathan Dwight, Jr., to Sable Island. Here he found the bird breeding, discovered some nine or ten nests, and made many interesting observations. All of this together with an exhaustive history of the bird and a colored plate is contained in the second memoir of the Nuttall Ornithological Club, entitled: *The Ipswich Sparrow and its Summer Home*, by Jonathan Dwight, Jr., M. D., published by the Club in August, 1895. A search by Dr. Dwight and others on the sandy portions of the Magdalen Islands, on Prince Edward's Island, Nova Scotia, and New Brunswick has failed to find the Ipswich Sparrow breeding. "Hence," as Dr. Dwight says, "it becomes extremely probable that the Ipswich Sparrow is an island species, confined to Sable Island, where it has made its home perhaps for centuries." Dr. Dwight found that the Ipswich Sparrow is resident on Sable Island the whole year round, and that it is the only land bird that makes its nest there, being known as the "Gray Bird" to the few inhabitants.

Sable Island lies nearly one hundred miles from the Nova Scotia coast and consists of "a scant twenty miles of rolling sand-hills . . . some of the sand mountains attaining an elevation of eighty feet and resembling in almost every particular save greater size the stretches of sand dunes to be found along our Atlantic sea-board,—the same treeless aspect, the same sparse covering of coarse beach-grass, the same deserts of shifting white sand."¹

In general, the Ipswich Sparrow has been found along our Atlantic coast during the colder part of the year from Sable Island and New Brunswick southward. The most southerly records are from Georgia, from which State three have been taken, the most southern from Cumberland Island, and curiously

¹ Jno. Dwight, Jr.: *Memoirs Nuttall Orn. Club*, no. 2, p. 9, 1895.

enough at the late date of April 14th.¹ This was in 1903. They are found commonly during the winter at Long Island, and on the New Jersey and Virginia coasts, and always on or near sandy regions, and with two exceptions within sight and sound of the sea. Mr. William Brewster² has a bird in his collection, shot in the Fresh Pond marshes at Cambridge. Arthur T. Wayne³ shot a female on March 4th, 1902, from the top of a bush on the edge of an oat-field, near a sandy spot, seven miles from the ocean in South Carolina. From the observations of Dr. W. E. Hughes⁴ it would appear that the bulk of the Ipswich Sparrows passed farther south than New Jersey during midwinter. He found them most common in November and December, least common in January and February, while in March and April they became more common again, but not as numerous as in the autumn. His observations for this region therefore correspond very closely to mine for Ipswich.

The Ipswich Sparrow occurs along the coast of Essex County where there are sand beaches backed by dunes. It is even found at Swampscott and Lynn where the amount of sand back of the beaches is but small. I have also seen the bird in the salt marsh back of the Ipswich dunes and once in a field at Ipswich about two miles from the sea but near the salt marsh.

Ipswich Sparrows, like many other birds, disappear with marvelous facility when closely pursued, especially if the pursuer uses a gun. Another trite aphorism, especially applicable to this bird, is the statement that it is much easier to see the familiar than the unfamiliar. Also it is much easier to find a bird if one knows exactly where to go. There are parts of the Ipswich dunes where I have never seen Ipswich Sparrows, and other parts where they can almost invariably be found in the season. To illustrate these statements, the following incident is instructive. An experienced ornithologist went to Ipswich to see and obtain specimens of the Ipswich Sparrow, a bird previously unknown in life to him. This was in November, after these Sparrows had been common for some time. He tramped about the dunes for several hours, shooting wherever he caught a glimpse of a possible Ipswich Sparrow. He saw and secured only two birds. The following day, knowing where to go and adopting different methods, he was able to find bird after bird and that, too, at close range. He saw that day at least twenty-five Ipswich Sparrows.

In most of the accounts of the Ipswich Sparrow as found along our coast, it is described as being very shy, rising from the ground and flying wildly to some distance before it alights and at once conceals itself in the grass. This

¹ A. H. Helme: *Auk*, vol. 21, p. 291, 1904.

² Wm. Brewster, ed: *Minot's Land-birds and Game-birds of New England*, p. 202, 3d ed., 1903.

³ A. T. Wayne: *Auk*, vol. 19, p. 203, 1902.

⁴ W. E. Hughes: *Abstract of the Proc. Delaware Valley Orn. Club*, no. 3, p. 5, 1900.

is a perfectly true description of the bird under certain circumstances especially if, as has generally been the case with these writers, the chief object of their visit has been to collect rather than to observe the bird. In fact, pursued in this way, many of the specimens have been shot on the wing, the writers stating that it was almost impossible to find them on the ground. I must confess that my first Ipswich Sparrow was found and shot in this manner, but I very soon learned that with care they could be approached and studied at close range. The best place to watch them is on the beach, where the view is unobscured by grass. The beach is one of their favorite feeding places, particularly in the seaweed or "thatch" thrown up there. Except in the coldest weather, this attracts many insects and not only are the insects found in the stomachs, but the birds may actually be seen to catch them. I have even seen them jump into the air for an insect. Beetles and small flies are the chief kinds found. The bird is a walker and runner, rarely hopping, thus differing from the Savanna Sparrow which, although a runner, prefers to hop rather than to walk. An Ipswich Sparrow that I watched continuously for three quarters of an hour at a distance of a few yards, hopped but twice and then only when jumping from a slight elevation. In walking, it moves its head and shoulders in a dove-like manner. In running, the head is held low, so that the top of the head, back, and tail are parallel with the ground. Ipswich Sparrows may occasionally be seen to scratch, and they scratch vigorously, making the litter fly. I have thought that they did this with the two feet alternately, but so quickly as to seem to scratch with both at once like many of the other Sparrows, but of this I am not absolutely sure. Bearing out this view is the fact that I once saw an Ipswich Sparrow deliberately give one scratch with one foot only. Flirting the tail nervously is frequently indulged in.

Among the dunes, Ipswich Sparrows often alight on the seed-stalks of the beach-grass to obtain the seeds. They also, at times, alight in the bushes and even on the roofs of the few houses in the dunes. Their flight is a flickering, undulating one like that of the Savanna Sparrow, and like that bird they drop abruptly into the grass with the tail down. Like that bird, also, they frequently chase each other either in sport or in anger. They often associate with the other beach- and dune-loving birds, the Horned Larks, Snow Buntings, and Lapland Longspurs. In fact, I have several times seen all four species together and that, too, at close range. Thus on January 12th, 1902, I found a flock of Longspurs, Larks, and Snow Buntings with three Ipswich Sparrows feeding together in the Ipswich dunes. Again, on January 24th, 1904, in the space of some ten yards square on the beach at Ipswich, I found ten Horned Larks, four Snow Buntings, two Lapland Longspurs, and one Ipswich Sparrow—a truly notable company. The number of Ipswich Sparrows seen together in the fall

sometimes almost constitutes a flock. Thus on November 21st, 1903, I saw four on Ipswich Beach within the space of a square yard, and on another part of the beach, six scattered birds within twenty yards of me. On December 6th, 1903, I noted some nine Ipswich Sparrows on the beach all within the space of a few yards.

In flying, Ipswich Sparrows emit sharp *tsips* like the notes of the Savanna Sparrow. I have not yet been so fortunate as to hear them sing, but Dwight describes the song as like that of the Savanna Sparrow, but "more polished and tuneful" and "keyed a little lower and finished up with more of a trill."

The Ipswich Sparrow, once known, is easily recognized. It is considerably larger and with a proportionately longer tail than its near relative the Savanna Sparrow, from which it differs also in its lighter, sandy gray color, the Savanna Sparrow appearing much darker in contrast. These differences are easily noticed in October and early April when the opportunity is sometimes given to compare the two birds side by side in life. The pale sandy color of the Ipswich Sparrow is particularly noticeable when the bird is seen on the marsh or away from sandy surroundings, but even on the sand one at once notices its light color. In the spring, the yellow line above the eye is prominent in both sexes, and this is also to be seen, although less marked, in fall and winter in some adults. The tarsi are a pinkish straw-color, and the large dark spot on the mid-breast where several smaller spots come together is noticeable.

222 [542a] *Passerculus sandwichensis savanna* (Wils.).

SAVANNA SPARROW.

Abundant summer resident (winter); March 26 to November 12 (December 6, January 11).

Eggs: May 26 to June 20.

The two unusual winter records are for December 6th, 1879, noted by J. A. Jeffries at Marblehead, and for January 18th, 1902, one taken by L. A. Shaw and R. H. Howe, Jr.,¹ back of Ipswich Beach. It had previously been recorded in winter elsewhere in the State, once at Sandwich and once at Longmeadow.

The Savanna Sparrow is an abundant summer resident among the sand dunes, on the borders of the salt marshes, and among the adjoining grassy fields in all of which places it builds its nest. A nest found at Ipswich, May 30, 1904, is

¹ R. H. Howe, Jr.: *Auk*, vol. 19, p. 203,¹⁹⁰².

characteristic. It was built among the dunes just above the level of the highest tides on the shore of an estuary. The nest was concealed by a tuft of grass, and its bottom, which must have been excavated for the purpose, was below the level of the sand which was also rounded up about it. It was made of coarse grass, and neatly lined with fine grass. It contained four eggs. Nests are sometimes placed beneath mats of dead thatch-grass.

Abundant as the Savanna Sparrow is in summer, it is still more abundant during the migrations especially on the upper parts of the beaches and in the dunes. It is a persistent and interesting if not beautiful singer. Its song consists of two preliminary *chips* followed by two trills, the first grasshopper-like, the second rather sweet and musical. To many ears the first trill is inaudible except when the bird is near at hand. I have heard a bird repeat its song five times in a minute, and they may be heard singing during their entire stay with us. Their call note is a sharp *tsip* and when they chase each other, which they frequently do, they make a loud *bsss*. Occasionally a loud, smacking note may be heard and on rare occasions a soft feeble warble takes the place of a song. I have heard this even in the spring given by an adult.

The Savanna Sparrow runs but also hops, being more of a hopper than the Ipswich Sparrow which rarely resorts to hopping. I have also seen them scratch. They run through the grass with head down and disappear with great rapidity, but they are much tamer than their cousins the Sharp-tails. They are fond of chasing each other either in sport or in anger, and I have seen them facing each other like fighting cocks.

[545] *Coturniculus bairdii* (Aud.). BAIRD'S SPARROW. The first specimens of Ipswich Sparrow (*Passerculus princeps*) were erroneously referred to this species, and were figured by Maynard¹ under this name.

223 [546] *Coturniculus savannarum passerinus* (Wils.).

GRASSHOPPER SPARROW; YELLOW-WINGED SPARROW.

Not uncommon summer resident, locally; May 10 to July 21.

It was many years before I discovered that the Grasshopper Sparrow was at my doors, but once introduced to this interesting bird, I have had no difficulty in finding it again. Its fluttering, wren-like flight close to the ground, as if it were

¹ C. J. Maynard: The Naturalist's Guide, p. 112, 1870; see also J. A. Allen: Amer. Nat., vol. 3, p. 631, 1870.

ready to drop with fatigue at any moment, is as characteristic as its high, grasshopper trill. By measurement, I have found that I could distinctly hear the song one hundred and fifty yards, although the preliminary clicks could be heard ten or fifteen yards only. The song resembles the grasshopper portion of the song of the Savanna Sparrow, and I probably overlooked the bird on this account. I have heard from the same station in Ipswich at the same time, the short hissing song of the Sharp-tailed Sparrow, coming from the tall grass at the edge of a salt-water ditch in the marsh, the grasshopper trill of the Grasshopper Sparrow from the dry grassy hills adjoining the marsh, and the more prolonged partly grasshopper and partly musical trilling of the Savanna Sparrow from the dry "thatch" on the boundary between the two. After the Grasshopper Sparrow stops singing it is rarely seen, and I am therefore unable to state how late it stays with us. The latest date I have is July 21st when I found a bird in song. The only locality at which I have found the bird is at Ipswich, but I have no doubt that it is also found in other parts of the County.

224 [547] **Ammodramus henslowii** (Aud.).

HENSLOW'S SPARROW.

Rare and local summer resident ; May to September.

Eggs: May 25.

Mr. J. A. Farley tells me that, in 1902, a few pairs of Henslow's Sparrows came to a wet meadow recently drained in Lynnfield, and that he found one nesting. My own experience with the bird is limited. On June 17th, 1903, I saw one within twenty feet clinging to some beach-grass just back of the beach at Ipswich. It disappeared and I did not see it again. On June 27th, 1904, following Mr. Farley's directions, I found at Lynnfield two Henslow's Sparrows in a small wet marsh in which grew sedges, cotton-grass, pitcher-plants and cranberries. The meadow, about two acres in extent, is surrounded by alders, white cedars, and larches. Here I heard a sharp *shl-pp* or *shi-slik* and soon a Henslow's Sparrow dropped into the grass with tail pointed downward like a Sharp-tail. The curious song was repeated several times. The bird was shy and flew vigorously from bush to bush, showing its chestnut brown back.

225 [549] *Ammodramus caudacutus* (Gmel.).

SHARP-TAILED SPARROW.

Very common summer resident ; May 24 to November 8.

Eggs : June 8 to July 12.

The Sharp-tailed Sparrow is one of the most interesting inhabitants of the salt marshes, on the edges of which it builds its nest in tussocks of grass, raised a few inches to escape the unusual tides, or concealed in the dead "thatch." The birds appear to be distinctly social. In some localities several pairs are often found breeding together, while other localities, apparently equally favorable, are deserted. They may be found in all parts of the marshes, but they are particularly fond of the upper or black-grass region.

Sharp-tailed Sparrows are rather difficult birds to observe, especially if they are vigorously followed, as they then lie close, and when flushed, soon drop into the grass and instantly conceal themselves. If, however, the observer keeps still the birds often become quite tame and display their interesting habits. They run through the grass like mice, with heads low, occasionally pausing to look around, and stretching up to almost double their running height. They occasionally alight in bushes or small trees, and I have seen them running about a stone-wall near the marsh like mice. They fly low and alight by dropping suddenly into the grass with their tails pointed down.

Their song might easily be passed by unnoticed, so unlike is it to a bird's song, resembling most closely the plunging of hot iron into water. It may also be likened to the rubbing of a canoe over stiff thatch-grass, or the sinking of the boot into the oozy marsh. When the listener is near at hand two sharp *ticks* may be heard afterwards. Sometimes the *ticks* precede although they may be omitted entirely. The curious song may be written thus, *gshshllllh swik wik*, and is delivered with considerable emphasis, the main hissing part being audible to the distance of one hundred yards. It is frequently repeated, and occasionally has almost a trilling character. The song is generally delivered from the ground, but occasionally while the bird is flying. The call notes are sharp *chips* or *chucks*.

The birds often manage to keep out of sight while on the wing, by flying along ditches overgrown by grass, so that unless one knows how to look and listen for them, they may remain an unknown quantity.

The only bird except the Acadian and Nelson's Sharp-tails in the Essex County marshes with which the Sharp-tailed Sparrow could be confused is the

Savanna Sparrow, which is very common in the same salt-marsh regions. The latter bird is less shy, more apt to alight and remain in the open, appears darker on the back, and as it flies, its broad, slightly forked tail is easily distinguished from the sharp, pointed tail of *caudacutus*. A good look with the glasses, or when one is near at hand, with the naked eye, will reveal the yellow stripes over the eyes of the Savanna, and the gray ear coverts with buffy edgings of the Sharp-tailed Sparrow. The habits of flying and running are very similar in the two species, but are less mouse-like in the Savanna Sparrow. The juvenal-plumaged Sharp-tails in their buffy streaked dress look like miniature young Bobolinks.

226 [549.1] **Ammodramus nelsoni** (Allen).

NELSON'S SHARP-TAILED SPARROW.

Rare transient visitor, especially in the spring; September 25 to October 13.

227 [549.1a] **Ammodramus nelsoni subvirgatus** (Dwight).

ACADIAN SHARP-TAILED SPARROW.

Common transient visitor; May 23 to June 11; September 3 to November 5.

The Acadian can be easily distinguished from the resident Sharp-tailed Sparrow by its slightly larger size and by its buffy and very faintly striped breast. In general habits and song, it resembles exactly the resident bird. I have heard it deliver its oozy song fifteen times in a minute by the watch. They were so common and in such full song at so late a date as June 11th, in 1903, that I hoped they would stay and breed, but they were gone the next time I looked for them a few days later. A male shot on June 11th had fully enlarged testicles.

228 [550] **Ammodramus maritimus** (Wils.).

SEASIDE SPARROW.

Accidental visitor from the south.

A young male, shot by Geo. O. Welch at Nahant in August, 1877, was recorded by Dr. Brewer,¹ and is now in the collection of the Boston Society of Natural History. Howe and Allen² give a number of other records for the State, chiefly from the southern coast.

229 [552] *Chondestes grammacus* (Say).

LARK SPARROW; LARK FINCH.

Accidental visitor from the west.

There are three records from the County and only two others for the State. The first specimen was taken at Gloucester, in 1845, by S. Jillson.³ The second⁴ record from the County, the third for the State, was of one shot at Magnolia on August 27th, 1879, by my brother, Mr. W. S. Townsend. Two other specimens for the State were taken as follows: Newtonville, November 25th, 1877, by Mr. C. J. Maynard⁵; and Framingham, April 29th, 1883, by F. C. Browne.⁶

I am glad to be able to add a third record for the County, a fifth for the State, not before published. On August 21st, 1904, I noticed in the road about half a mile from the beach at Ipswich, with a few Song and Chipping Sparrows, a bird I at first thought was a Vesper Sparrow, owing to the white feathers in its tail. I soon saw, however, that the tail was somewhat fan-shaped, and that the white was not confined to the two outer feathers, and that it contrasted strongly with the dark tail. The bird's large bill was also noticeable, and the comparatively unspotted breast. As I did not get a good side view I did not notice the characteristic markings on the side of the head until I had shot it. It proved to be an adult male Lark Sparrow, quite fat, as was the other specimen taken at Magnolia twenty-four years before. The two are now side by side in my collection.

¹ T. M. Brewer: Bull. Nuttall Orn. Club, vol. 3, p. 48, 1878.

² R. H. Howe, Jr., and G. M. Allen: Birds of Massachusetts, p. 123, 1901.

³ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 224, 1856.

⁴ C. W. Townsend: Bull. Nuttall Orn. Club, vol. 5, p. 53, 1880.

⁵ H. A. Purdie: Bull. Nuttall Orn. Club, vol. 3, p. 44, 1878.

⁶ F. C. Browne: Bull. Nuttall Orn. Club, vol. 8, p. 181, 1883.

230 [554] *Zonotrichia leucophrys* (Forst.).

WHITE-CROWNED SPARROW.

Uncommon transient visitor; May 12 to May 24; October 3 to —; average date of arrival for four years, May 15.

At times this handsome bird is not uncommon in the spring. Mr. W. A. Jeffries notes this at Swampscott, in 1876, and says they were quite tame. I have seen four on May 20th, 1900, feeding on some grain dropped within two feet of the door-steps of my summer house at Ipswich.

231 [558] *Zonotrichia albicollis* (Gmel.).

WHITE-THROATED SPARROW; PEABODY-BIRD.

Common transient visitor; April 15 to May 21; September 21 to November 11.

In the autumn, one may not infrequently hear a faint lisping caricature of their glorious spring song. This is, I suppose, the effort of immature birds.

232 [559] *Spizella monticola* (Gmel.).

TREE SPARROW.

Abundant winter visitor; October 7 to April 22.

The Tree Sparrow is one of the common winter birds in the thickets among the sand dunes.

On January 15th, 1904, I was attracted by the chirping of this bird at 11.30 P. M. on the Public Garden, in Boston, and saw one hopping about on the snow near an electric light. It was soon joined by another, and both flew away chirping.

233 [560] **Spizella socialis** (Wils.).

CHIPPING SPARROW; CHIPPY.

Abundant summer resident ; (March 24) April 9 to October 28 ; average date of arrival for ten years, April 7.

Eggs : May 23 to June 26.

Besides the usual wirey trill, this bird may occasionally be heard to warble quietly and softly.

234 [563] **Spizella pusilla** (Wils.).

FIELD SPARROW.

Common summer resident ; April 2 to October 26.

Eggs : May 21 to June 12.

At the height of the season, the Field Sparrow sometimes repeats his lovely song five times in a minute. It is certainly one of the sweetest songs we have.

235 [567] **Junco hyemalis** (Linn.).

JUNCO; SNOWBIRD.

Abundant transient visitor, not uncommon in winter ; (September 3) September 26 to November 30 ; winter ; March 8 to May 2 (May 21).

The unusual record for May 21st, was made by Mr. Hoffmann who found a single bird at Ipswich on that date in 1904 ; and the September 3d record is of a bird I saw at Groveland in the same year.

The Junco has, besides the trill which varies considerably, resembling sometimes the metallic tinkle of a cow-bell, a low sweet warble, which also varies, and sometimes recalls the song of the Goldfinch. While with us, they are particularly apt to sing if they are in the company of a singing band of Fox Sparrows, and I have heard them sing their warbling song in October. The first arrival in 1903, on September 28th, alighted on one of the handles of the wheelbarrow between which I was standing.

236 [581] **Melospiza cinerea melodia** (Wils.).

SONG SPARROW.

Abundant summer resident, a few winter ; March 10 to November 4 ; winter ; average date of arrival for five years, March 10.

Eggs : May 10 to July 29.

I have occasionally found one or two Song Sparrows in January, especially near the seacoast, and they are not very rare in December and the latter half of February. On January 22d, 1904, I found four in the Ipswich dunes. I have heard them sing in every month but January. Mr. Oldys has noted between one and two thousand different songs of this bird, and even to a musically untrained observer it is evident that the songs of this Sparrow differ individually, but especially with the locality. For example, those on the Maine coast sing very differently from those in Essex County, and I have noticed a difference between the songs of those at Manchester and those at Ipswich, and I have wondered whether the constant association with their cousins the Vesper Sparrows at Ipswich has not to some extent modified their songs there. The gently warbling song so common during the last half of the summer and autumn, differs entirely from their regular song, and appears to be confined to the young of the year.

I have seen in April a Song Sparrow scratching with both feet at once, jumping forward like a Fox Sparrow, until a groove half the depth of the bird was formed in the mellow earth of the garden.

237 [583] **Melospiza lincolni** (Aud.).

LINCOLN'S SPARROW.

Uncommon transient visitor ; May 31 ; September 27 to October 14.

The Lincoln's Sparrow is generally a hard bird to find, keeping close in walls and hedge rows, but on one occasion I had no difficulty, as I discovered one flying about in the hay-loft of my barn. This was on May 31st, 1903. It proved to be a female, very fat, with stomach stuffed with insects. As a rule, however, it is easier to find the bird in the autumn than in the spring.

238 [584] *Melospiza georgiana* (Lath.).

SWAMP SPARROW.

Abundant summer resident (winter); April 8 to October 31 (January 10).

Eggs: May 17 to July 14.

The January record was made by Mr. C. E. Brown, of Beverly, who shot the bird in 1902.

Although I have not infrequently seen the bird elsewhere, the Topsfield marshes of the Ipswich River, the home of the Long-billed Marsh Wren, are also the home of this bird. Here they are to be found breeding in large numbers, and, like their neighbors the Wrens, they sing at all hours of the day and night, although they are not quite as nocturnal as that bird. They also have several other of the Wren's characteristics. Like the Wrens and other marsh-loving birds, their backs are of a deep chestnut brown. Full of energy, they resemble the Marsh Wrens in flying about on quivering wings, in chasing each other, in diving into the grass, and especially in their scolding notes, one of which is a chattering *tsec*. Their songs, which vary very much, sometimes resemble closely the chattering song of the Wren. The common song is like a musical Chipping Sparrow's song, but it varies from a very dry trill to a deep melodious one. I have heard one sing delightfully *sweet sweet sweet*, and another in a neighboring bush trilling like a Chipping Sparrow, while a third near at hand sang like a "glorified Chippy." On rare occasions one may hear a faint, sweet, beseeching warble. They occasionally, like the Wrens and many other birds, fly up, and pour forth their song on the descent,—the flight song. I have known two experienced ornithologists to shoot Swamp Sparrows, having mistaken them for Marsh Wrens. How much of this resemblance is due to similar environment and how much to imitation, is an interesting matter for speculation.

239 [585] *Passerella iliaca* (Merr.).

FOX SPARROW.

Abundant transient visitor; March 12 to April 20 (May 2); October 15 to November 16; average date of arrival for five years, March 20.

The unusually late date, May 2d, was in 1878, of a bird seen at Swampscott by J. A. Jeffries. In the spring of 1904, they were particularly abundant and in full song.

The clear, deep, melodious song of this bird makes even that of the beloved Song Sparrow seem thin and trivial. At times, however, when a distant flock is singing imperfectly and confusedly it reminds one of the piping of frogs.

Why they do not pitch forward on their heads when they spring back with both feet at once in scratching seems a mystery. The dead leaves and twigs sometimes fly back to the distance of a foot or more.

240 [587] *Pipilo erythrophthalmus* (Linn.).

TOWHEE; CHEWINK.

Common summer resident; May 3 to October 1 (December 4).

Eggs: May 17 to June 1.

The winter record is of a bird seen on December 4th, 1904, at Smith's Point, Manchester, by Mr. W. R. Peabody.

Like the famous Capercaillie, which is murderously stalked when he is uttering his love-song, the Towhee can be closely approached when he is pouring forth his song from some high branch, if the listener advances two or three paces at a time during the song, and stands motionless during the intervals.

241 [593] *Cardinalis cardinalis* (Linn.).

CARDINAL.

Accidental visitor from the south.

Nuttall¹ says: "And a few stragglers even proceed as far to the north as Salem in Massachusetts."

One was seen frequently at Marblehead Neck by Mr. H. C. Farwell in 1901, and again in April, 1902.² Mr. H. F. Chase of Amesbury writes me

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 520, 1832.

² Card Catalogue, Peabody Academy.

that on May 19th, 1901, with Mr. Warren Huntington and two others, he found on a sidehill at Amesbury not far from the Merrimac River, a pair of Cardinal Grosbeaks and observed them minutely from the distance of twenty-five feet, so that there was no possible doubt as to their identity. Mr. Chase felt sure from the way they acted that they nested in that locality, as they appeared to be looking for nesting-material.

242 [595] *Zamelodia ludoviciana* (Linn.).

ROSE-BREASTED GROSBK.

Common summer resident ; May 8 to September 21.

Eggs : May 29 to June 15.

This bird, so charming both in song and in plumage, has increased in numbers of late years. Thus Putnam¹ says : "Six or eight years ago this bird was very rare in this vicinity but now it is quite common. — J[illson]." It is certainly more common now than it was twenty-five years ago. Their song is beautiful, but their call note is sharp and trying to the ears, suggestive of the squeaking of two branches rubbing together. The female may sometimes be heard to repeat several times a faint and sweet enquiry-note *why?* to which the male replies, *dear dear deary chéri* and much else equally pleasant. I have found potato beetles in their stomachs.

243 [598] *Cyanospiza cyanea* (Linn.).

INDIGO BUNTING ; INDIGO-BIRD.

Not uncommon summer resident ; May 9 to September.

Eggs : June 14 to June 22.

It is probable that this bird has become slightly less common during the last quarter of a century.

¹ F. W. Putnam : Proc. Essex Inst., vol. 1, p. 212, 1856.

244 [604] *Spiza americana* (Gmel.).

BLACK-THROATED BUNTING; DICKCISSEL.

Formerly not uncommon summer resident, now accidental from the west.

Nuttall¹ says: "They . . . are not uncommon in this part of New England, dwelling here, however, almost exclusively in the high, fresh meadows near the salt marshes."

Two in full song and about to breed were taken at West Newbury in June, 1873, and reported by Mr. H. A. Purdie.² There is a fine adult specimen in the collection of the late Dr. Charles Palmer, at Ipswich, probably taken in that vicinity. One very fat bird in worn plumage was shot by my brother, Mr. W. S. Townsend, at Magnolia, on August 27th, 1879, and is in my collection.

An interesting article by Mr. S. N. Rhoads,³ entitled Exit the Dickcissel, speaks of it as a bird of the past on the Atlantic coast plain. "This fact has been emphasized by the experience of the last fifteen years. In that period perhaps a dozen stragglers have been seen or shot in the extensive regions reaching from South Carolina to Maine and from the eastern foothills of the Alleghanies to the Atlantic coast. This large area was, in favored spots, especially in the lowlands, meadows and valley bottoms of the tidal plain, the breeding ground of thousands of this species in the days of Wilson, Audubon, Nuttall, Cassin, Woodhouse and Baird. . . . In Massachusetts, their north-eastern breeding limit, where they never were abundant as in the Middle States, the records show a similar dwindling down to about 1880, all the last breeding records occurring in the seventies."

245 [605] *Calamospiza melanocorys* Stejn.

LARK BUNTING.

Accidental visitor from the west.

A male was shot by N. Vickary at Lynn⁴ on December 5th, 1877, and is

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 462, 1832.

² W. A. Stearns and Elliott Coues: New England Bird Life, vol. 1, p. 280, 1883.

³ S. N. Rhoads: Cassinia, p. 17, 1903.

⁴ J. A. Allen: Bull. Nuttall Orn. Club, vol. 3, p. 48, 1878.

now in the mounted collection of the Museum of Comparative Zoology, at Cambridge. This is the only record for the State.

246 [607] *Piranga ludoviciana* (Wils.).

LOUISIANA TANAGER.

Accidental visitor from the west.

The only record for this bird in Massachusetts is of an adult male that was captured at Lynn¹ in a severe snowstorm on January 20th, 1878. In Mr. W. A. Jeffries' notes for 1878, he says: "This bird flew against a house on the outskirts of Lynn attracted by the caged birds within; it was caught in a cage and sold to A. M. Tufts. It seemed not to have been a caged bird." The specimen, a male, not a female as stated by some, is now in the collection of the Peabody Academy labeled Lynn, February 8th, 1878. Howe and Allen (p. 113) for some reason, say: "*Salem* (not Lynn)."

247 [608] *Piranga erythromelas* Vieill.

SCARLET TANAGER.

Not uncommon summer resident; (April 30) May 10 to October 16.

Eggs: June 5.

It is a curious fact that a bird of such conspicuous plumage and as common as is the Scarlet Tanager should be so rarely seen except by bird students.

248 [610] *Piranga rubra* (Linn.).

SUMMER TANAGER.

Accidental visitor from the south.

There are four specimens from the County and only two other records for the State. Two² were taken at Lynn after a severe storm, on April 21st, 1852,

¹ T. M. Brewer: Forest and Stream, vol. 10, p. 95, 1878.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 224, 1856.

according to S. Jillson. One¹ was taken at Swampscott in June, 1866. The fourth is a mounted specimen in the Peabody Academy collection, taken at Boxford in July, 1888, by A. F. Killian. The two other records for the State, according to Howe and Allen (p. 112), were of specimens taken at Amherst in August, 1867, and at Framingham in May, some years prior to 1870.

249 [611] *Progne subis* (Linn.).

PURPLE MARTIN.

Uncommon and local summer resident ; April 20 to September 16.

Eggs: June 18.

In 1860, Mr. S. P. Fowler² stated: "During a period of less than fifty years, the purple martin has become comparatively scarce in the eastern part of Essex County. . . . It is certain they were numerous in this vicinity, forty years ago, and that they are now very scarce." Mr. Maynard tells me that there was a colony at Ipswich in the years 1867 to 1872, but they have long since departed. Up to two or three years ago they bred in Georgetown, Peabody, Lynnfield, Salem, and Beverly, but in the prolonged wet storm of June, 1903, they were practically all exterminated. Mr. Carl H. Russell, of Lynnfield, writes me under date of August 2d, 1904, that about fifteen pairs of Purple Martins nested in two boxes at his home, but they were all destroyed by the June storm in 1903, there being none seen at the boxes after the storm. No Martins appeared in the spring of 1904, and the English Sparrows took full possession of the houses. I saw a single female Martin near my summer house at Ipswich on June 26th, 1904.

250 [612] *Petrochelidon lunifrons* (Say).

CLIFF SWALLOW; EAVE SWALLOW.

Common summer resident, locally ; May 1 to September 9.

Eggs: May 25 to July 20.

Putnam,³ writing in 1856, says: "Twenty years ago, this bird was hardly

¹ J. A. Allen: Bull. Essex Inst., vol. 10, p. 15, 1878.

² S. P. Fowler: Proc. Essex Inst., vol. 3, p. 35, 1860.

³ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 205, 1856.

known in this part of the country, but it is now one of our common summer visitants." Nuttall¹ says that it was first observed at Henderson on the banks of the Ohio, in 1815, and at Whitehall, N. Y., in 1817; that in 1818, it first came to the White Mountains, and, in 1830, to Winthrop, Maine. It is an abundant bird in parts of Ipswich, and I have also seen it at Topsfield. Mr. J. A. Farley says it breeds at Saugus and Lynnfield.

It is very interesting to see these birds gathering soft mud for their nests, alighting on the edge of a pond, often four or five together, with their heads pointed towards each other. Each raises its wings and flutters as if to prevent itself from sinking into the mud. The mud is taken in the bill and the nest is shaped by the bird's breast. Although the nests are built under the eaves on the south side of barns, storms occasionally come up from the south and wash them down during the breeding season, and they always disappear during the winter, at least from the barns at Ipswich. On June 7th, 1903, I counted 58 of the retort-like clay nests under the southern eaves of a barn near the sea at Ipswich. A storm with much rain came up from the southeast on June 12th, and on June 14th, examination of the barn showed that every nest had been washed down; not one remained. On the ground I found numerous broken eggs and 55 dead young birds, and this notwithstanding the inroads of rats and poultry. Even then, although the storm continued, the birds were beginning to rebuild, as the wind had shifted to the northeast. On June 17th there were eighteen nests three quarters built; on June 21st twenty nests, all but four or five completed, and on July 5th twenty-three nests, all but three completed.

The result of this disastrous storm was shown in the slightly lessened numbers in 1904, when 47 nests were built on this barn. Again a catastrophe occurred, not as serious, however, because it was so late in the season. On July 23d, 1904, came an easterly storm that whistled around under the southern eaves and dislodged all but eight nests. Even at this late date there were young, which were found dead on the ground.

I have endeavored to attract the Eave Swallows to my own barn about half a mile away, by putting up under the southern eaves, artificial retort-like nests of wire netting covered with plaster bandage. Although the birds have inspected these shams for two springs, they decline to occupy them or to build near them.

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 604, 1832.

251 [613] *Hirundo erythrogaster* Bodd.

BARN SWALLOW.

Abundant summer resident ; (April 17) April 28 to September 22 ; average date of arrival for five years, May 2.

Eggs: May 24 to July 12.

The unusually early date, April 17th, was in 1904, when on a cold day with snow flurries, I observed a Barn Swallow together with a Tree Swallow flying about the dunes close to the beach at Ipswich.

Barn Swallows nest commonly in all the good old-fashioned barns, of which there are many in Essex County. They fly in and out through the doorways and broken windows, and their musical twitterings and pleasing song, for song they have, are always suggestive of the delights of a farm. They also build their nests on the beams of small sheds, and one was built this year, 1904, under the broad eaves of a boat-house on the marsh. It is interesting to see a number of young birds sitting on the tops of bean poles, all heading towards the wind like weather-cocks, fluttering their wings when the parents come to feed them. The transfer of food also takes place on the wing, the parent and young flying up to meet each other.

Barn Swallows are very common feeders along the beaches, and, excepting the large flocks of Tree Swallows, are the most common Swallow there. On one occasion I heard a great outcry among them and found a company of Barn Swallows mobbing a jack rabbit as he bounded off on the upper part of the beach. All the Swallows frequent the beaches during stormy weather, and, owing to the abundance of insects there, they probably suffer less than inland birds from the storms. During wet weather Barn Swallows follow and fly around a man or horse walking through the fields, often flying within a few feet to capture the insects aroused from the grass.

There is an albino Barn Swallow in the collection of the Peabody Academy.

252 [614] *Iridoprocne bicolor* (Vieill.).

TREE SWALLOW ; WHITE-BELLIED SWALLOW ; "MARTIN."

Abundant summer resident ; March 15 to November 2 ; average date of arrival for ten years, March 28.

Eggs: May 14 to June 15.

On March 15th, 1879, three Tree Swallows were seen at Swampscott by the late Dr. J. A. Jeffries, and again, in 1902, on March 15th, Mr. H. W. Wright saw two Tree Swallows at Ipswich. This is an unusually early date. The birds are generally gone by the middle of September; in fact, most of the Tree Swallows of the County have, I believe, left by the middle or end of August, while birds seen later come from more northern homes. The latest date, November 2d, 1878, is also from Dr. Jeffries' notes, where he records that he saw one bird "pursued by a lot of Yellow-rumped Warblers."

The Tree Swallow is faithful to its name, as, much more commonly than is generally supposed, it still nests in hollow trees in Essex County. I have found it nesting in apple trees in orchards, and in hollow trees in the Topsfield marshes. Maynard¹ speaks of finding its nest in a hole in an old blasted cedar in the Ipswich dunes. Mr. S. P. Fowler² reported a Tree Swallow "building in an old nest of the Baltimore Oriole" at Danvers. The bird prefers, however, the bird-houses made for its benefit, but it is rare to find more than one family breeding in the same house, no matter how many the apartments. These are most delightful birds to watch and I consider a year lost in which I do not put up a new house for them—and it generally finds an occupant. During the latter part of July and August, long after the young are full grown, it is a common sight to see half a dozen or more Tree Swallows flying about a bird-house, alighting on the roof and clinging to the pole below. They balance themselves on the upright pole and on the narrow ledges of the house by extending and fluttering one wing. During the summer of 1904 two of my houses were occupied by Bluebirds soon after the departure of the broods of Tree Swallows, and after this no Swallow approached the houses with any comfort to himself.

By July 1st, Tree Swallows begin to collect, at first in small flocks, in the salt marshes. These flocks rapidly increase in size, and by the end of July and first of August immense numbers of Tree Swallows may be seen all along the seacoast, particularly in the region of the salt marshes and sand dunes. At times they cover the sand, fences, roads, and bushes in one black mass, or they string along the telegraph wires, sitting shoulder to shoulder for several hundred yards. In the salt marshes they alight on sticks, the "staddles" or platforms for salt-hay cocks, boat-houses, and gunners' blinds. In the dunes and pastures by the sea their favorite perch is among the bayberry bushes (*Myrica carolinensis*), for here they obtain the wax-covered bayberries of which they are so fond, and which are to be found, generally bereft of their outer coating, in the drop-

¹ C. J. Maynard: The Naturalist's Guide, p. 106, 1870.

² S. P. Fowler: Proc. Essex Inst., vol. 3, p. 35, 1860.

pings. I have dissected a young Tree Swallow shot at Ipswich on September 1st, and found 41 of these berries in its alimentary canal. I have never found these berries in the other Swallows.

Tree Swallows commonly pass the night at this season in willows or elms, from which they arise with a loud whirring of wings when disturbed in the early morning. They often seek the south side of a barn roof to sun themselves in the morning. The numbers in these large flocks may reach two or three thousand or more individuals.

On the sand beaches they may be seen coursing up and down, picking up insects close to the sand, especially in the vicinity of dead fish. They frequently alight on the beach. In 1877, I noted that they collected in large flocks and frequently alighted on the rocks and bushes of Kettle Island, off Magnolia. On barn roofs and in the flocks on the telegraph wires and elsewhere one may often see with the Tree Swallows, the Barn, Cliff, and Bank Swallows, and at Ipswich, near the sea, I should place the relative abundance of these birds in that order, the Tree Swallows far outnumbering all the rest.

At this season when they are flocking preparatory to the journey south, they may often be seen flying about holes in trees or posts, or bird-houses, as already described, and picking up feathers in their bills as they fly.

Being able to feed as they fly, the Swallows all migrate by day, and distinct migratory movements can often be watched. At times, great flocks, after resting, rise up in irregular circles, sometimes driving together and whirling about like columns of smoke, all the time rising higher and higher. On reaching a considerable elevation they disappear towards the south. At other times they may be seen flying south in scattered ranks high in the air, only a few coming close to the ground, while again they skim along in their southward flight close to the earth, turning back for a minute occasionally but for the most part pressing southward. Anon, they all alight in the bayberry bushes to rest and feed, or they cover densely the upper parts of the beach or the smooth sides of sand dunes, making short excursions and returning again to rest before continuing on their way.

Estimates of the numbers of these flocks are perhaps vain to attempt, and are impossible when the air is filled with the birds, but a few counts made as the birds were passing, may be worth recording. On September 1st, 1904, the Tree Swallows at Ipswich Beach appeared to be almost constantly flying south between the hours of 6 and 11 A. M. In five minutes, between 9.10 and 9.15, I counted 187 flying south close to the beach between the dunes and the sea, and many were flying over the dunes. Between 9.20 and 9.25, 129 flew by. On September 5th, 1904, in the Ipswich dunes the numbers were very great; 500 flew south overhead between 12.45 and 12.50 P. M., and again, I counted in two

minutes 179 flying by close to the sand in a space of 100 yards between me and a dune. It is evident that there were many thousands flying south on both of these days. During these flights the birds frequently call to each other, as do also the mysterious hosts that we hear but do not see in the nocturnal migrations.

A smooth expanse of sand on which they have rested, shows numerous droppings, each made up of insect remains and of one or more bayberry seeds. The tracks of the bird's feet are wide apart and show a walking gait with short steps, the wings brushing the sand from time to time, especially when the birds turn around. Many tracks show that the bird did not move about on the ground after alighting.

The early morning song of the Tree Swallow I have already mentioned (see page 46).

The worst enemy of this delightful and useful bird is the detestable English Sparrow which has well nigh driven it from all cities and towns in the County, usurping its breeding houses. Although the Tree Swallow is brave and pugnacious, and easily ousts the intruder at first, I know from observation in former days in Boston that after fighting the Sparrow, who entrenches himself in the bird-house during the winter, for several springs in succession, the Swallow at last gives up the contest and seeks peace and quiet in some more secluded spot. I do not blame him.

253 [616] *Riparia riparia* (Linn.).

BANK SWALLOW.

Common summer resident; May 2 to September 2 (November 2); average date of arrival for five years, May 4.

Eggs: June 4 to June 17.

The Bank Swallow breeds in the gravel banks of glacial drift exposed by the cutting of the sea or rivers, and especially in the cuttings made in hills for the purpose of mending the roads. I have also found its holes in the steep cuttings made by the wind in the Ipswich dunes. During July and August, it is frequently to be seen alighting with the other Swallows on the sand beaches, or on fences and telegraph wires. It is the least common of all the Swallows. It collects in small numbers at this season, but I have sometimes found large flocks of these birds. Thus, as early as July 10th, in 1904, I found a flock of several hundred Bank Swallows alighting on the rocks, weed-stalks, and fences on the

barren hillsides of Great Neck, in Ipswich. With them were a number of Tree Swallows and a few Barn and Eave Swallows. In the report of Mr. E. H. Forbush¹ on the Destruction of Birds by the Elements in 1903-04, he says, in speaking of the storm of June, 1903: "Bank Swallows and Eave Swallows were not generally common in this State before the storm; they have been less common since. It has been said there are no Bank Swallows in Essex County." They were certainly diminished in numbers in the summer of 1903, but the flock seen in July, 1904, would seem to show that they were recovering. How many of these breed inside the limits of the County I cannot say.

254 [618] **Ampelis garrulus** (Linn.).

BOHEMIAN WAXWING.

Accidental visitor from the north.

A female was taken at Lynn, on February 18th, 1877, by N. Vickary²; the specimen is now in the collection of the Museum of Comparative Zoology, at Cambridge. There are a number of other records of this bird for the State.

255 [619] **Ampelis cedrorum** (Vieill.).

CEDAR WAXWING; CEDAR-BIRD; "CHERRY-BIRD."

Permanent resident, common in summer, uncommon in winter.

Eggs: May 30 to July.

The wild black or rum cherry, of whose fruit this bird is especially fond, is a very abundant tree in Essex County.

256 [621] **Lanius borealis** Vieill.

NORTHERN SHRIKE; BUTCHER-BIRD.

Not uncommon winter visitor, most uncommon in the autumn; October 14 to May.

¹ E. H. Forbush: 51st Ann. Report of Mass. State Board of Agriculture, p. 479, 1904.

² J. A. Allen: Bull. Essex Inst., vol. 10, p. 15, 1878.

The stomachs of two Northern Shrikes in my collection taken in November contained nothing but grasshoppers. One shot in December had eaten a Golden-crowned Kinglet. Thorn-bushes on which they may impale their victims are common in Essex County.

257 [622e] *Lanius ludovicianus migrans* W. Palmer.

MIGRANT SHRIKE; NORTHERN LOGGERHEAD SHRIKE.

Very rare visitor.

A specimen was taken at Lynn on November 27th, 1877, and is recorded by J. A. Allen.¹ It is possible that the specimen is the one now in the mounted collection of the Museum of Comparative Zoology, at Cambridge, labeled Lynn, collected by N. Vickary, and dated November, 1876. There are three specimens in the collection of the Peabody Academy, labeled, respectively, Essex County, 1891; Swampscott, November, 1891; and Salem, 1899. A specimen was taken at Ipswich² on March 29th, 1893, and was mounted by Vickary. On September 15th, 1904, Mr. C. E. Brown captured a bird of this species at Ipswich. It is now in the mounted collection of the Boston Society of Natural History.

258 [624] *Vireo olivaceus* (Linn.).

RED-EYED VIREO.

Abundant summer resident; May 9 to September 22 (October 26).

Eggs: May 25 to July 20.

The exceptionally late date, October 26th, records a bird observed at Swampscott in 1876, by Mr. W. A. Jeffries. There is probably no bird song that we hear so much as that of this bird and although it is somewhat monotonous, it is cheerful and wears exceedingly well.

¹ J. A. Allen: Bull. Essex Inst., vol. 10, p. 15, 1878.

² N. Vickary: Ornithologist and Oologist, vol. 18, p. 51, 1893.

259 [626] *Vireo philadelphicus* (Cass.).

PHILADELPHIA VIREO.

Very rare transient visitor.

Although there is only one record for the County and only three others for the State, — all autumnal records, — it seems probable that the Philadelphia Vireo may in reality be less rare than it appears, as it breeds only a short distance to the north, about Lake Umbagog and northwestward across New Hampshire. The fact that its song so closely resembles that of the common Red-eyed Vireo would lead one to pass the bird by in the spring.

The only record¹ for the County is of a male taken by me on September 18th, 1879, at Magnolia. The bird was found feeding in some bushes by the side of a road. Its stomach contained besides insects, a number of large seeds and berries. Records of twenty-two stomachs of the other Vireos all showed nothing but insects. I have recently given the specimen to the Peabody Academy, at Salem, in whose collection of Essex County birds it now has a place.

The only other records² for the State are: one taken at Cambridge on September 7th, 1875; one at Brookline in September, 1881 (?); and one at Cambridge, September 27th, 1894.

260 [627] *Vireo gilvus* (Vieill.).

WARBLING VIREO.

Common summer resident; May 5 to September.

Eggs: June 11.

The Warbling Vireo may be often heard, rarely seen, in the lofty branches of the American elms that line the roadways of the old Essex County towns.

¹ C. W. Townsend: Bull. Nuttall Orn. Club, vol. 5, p. 53, 1880.

² R. H. Howe, Jr., and G. M. Allen: The Birds of Massachusetts, p. 86, 1901.

261 [628] **Vireo flavifrons** Vieill.

YELLOW-THROATED VIREO.

Common summer resident ; May 6 to September 12.

Eggs : May 24 to June 17.

While passing through the old South Common at Ipswich I have sometimes heard the song of this bird and of the Red-eyed and Warbling Vireos.

262 [629] **Vireo solitarius** (Wils.).

BLUE-HEADED VIREO; SOLITARY VIREO.

Uncommon summer resident, rather common transient visitor ; April 23 to October 10.

Eggs : May 19 to May 21.

Mr. J. A. Farley tells me that this bird breeds not uncommonly in white pine woods throughout the County. I have found it in early July in some pines in Hamilton. It is an example of a bird of the Canadian zone. Its beautiful ringing song always reminds one of the wild and cool northern woods. The song is very varied with loud outbursts and sweet and tender low notes, and it resembles, yet is very different from the peaceful and monotonous song of the Red-eyed Vireo.

263 [631] **Vireo noveboracensis** (Gmel.).

WHITE-EYED VIREO.

Uncommon summer resident, locally ; May 20 to September 20.

Eggs : May 22 to June 18.

This is an example of a bird of the Upper Austral zone extending into the Transition zone. Mr. W. A. Jeffries tells me that although it bred commonly at Swampscott in the seventies and eighties, the clearing out of the underbrush by the increase of population and by the Gypsy Moth Commission has diminished its numbers. In his company on July 6th, 1904, I found one of these birds

whose un-vireo-like song was heard in an alder thicket near the Swampscott railroad station. It was singing its most common song, *chip-whew-yo*, which suggests strongly a Whip-poor-will's song heard near at hand. It also whistled loudly a single note like that of the Bob-white. Elsewhere, at Arlington Heights, and at Hyde Park, I have heard several other variations of its song. There is a specimen in the Peabody Academy collection labeled Ipswich.

264 [636] **Mniotilta varia** (Linn.).

BLACK AND WHITE WARBLER ; BLACK AND WHITE CREEPER.

Very common summer resident ; April 28 to September 22 ; average date of arrival for seven years, May 3.

Eggs: May 17 to June 18.

265 [639] **Helminthus vermivorus** (Gmel.).

WORM-EATING WARBLER.

Accidental visitor from the south.

A bird of this species was seen at the Salem Willows, on April 14th, 1902, by Mr. H. C. Farwell, Mr. J. H. Sears, and others ; it was shot on April 16th, 1902, and is now in the collection of the Peabody Academy at Salem. There are only two, possibly three, other records for the State.

266 [642] **Helminthophila chrysoptera** (Linn.).

GOLDEN-WINGED WARBLER.

Not uncommon summer resident, locally ; May 13 to September 1 (October 8).

This beautiful Warbler appears to be increasing, and breeds now sparingly in Ipswich, Georgetown, Lynnfield, and Rowley. Maynard found it breeding in Rowley in the late sixties. During the late seventies the Golden-winged Warbler was an unknown quantity to me in Magnolia, but within the last five or

six years I have found it not uncommonly in Ipswich and Hamilton, both in the migrations and in the breeding season. Its song resembles that of the Black-throated Green Warbler.

267 [645] **Helminthophila rubricapilla** (Wils.).

NASHVILLE WARBLER.

Not uncommon summer resident, common transient visitor; May 2 to October 14 (January).

Eggs: May 21 to June 21.

The January record is of a dead bird found at Swampscott by Mr. W. Faxon¹ on January 31st, 1890. It had been hung in a barberry bush by a Shrike, and had not been dead over two weeks.

The Nashville Warbler breeds in several parts of the County as at Magnolia, Topsfield, Andover, and Swampscott. In the latter place Mr. W. A. Jeffries and the late Dr. J. A. Jeffries found a number of their nests. I quote from their records of a nest found May 21st, 1878, containing five eggs. It was "built deeply into a tussock of moss and grass at the foot of a bush in such a way as to be partly overhung; made of strips of cedar bark and a few dry leaves and grasses, and lined with root fibers."

268 [646] **Helminthophila celata** (Say).

ORANGE-CROWNED WARBLER.

Very rare transient or accidental winter visitor.

There is only one record for the County, that of a young bird taken in Lynn² on January 1st, 1875, and now in the collection of the Boston Society of Natural History. According to Howe and Allen there are only three other records for the State.

¹ Walter Faxon : Auk, vol. 7, p. 409, 1890.

² T. M. Brewer : Proc. Boston Soc. Nat. Hist., vol. 17, p. 439, 1875.

269 [647] *Helminthophila peregrina* (Wils.).

TENNESSEE WARBLER.

Very rare transient visitor ; May 23 and September.

There are two undated specimens in the collection of the Peabody Academy, from Essex County, obtained by S. Jillson. Mr. W. A. Jeffries reports one as seen by Mr. Walter Faxon and himself at Swampscott on May 23d, 1891.

270 [648a] *Compsothlypis americana usneæ* Brewst.

NORTHERN PARULA WARBLER.

Abundant transient visitor, rare summer resident ; May 2 to May 30 ; June, July ; September 10 to October 10.

The *Usnea* "moss" that is needed for this bird's nest is to be found in various parts of the County. I have found the birds in Magnolia during June and July, and noted one as singing on July 4th, 1877. Mr. H. A. Purdie tells me that he has heard them in the breeding season in Essex. I have, however, no actual record of their nesting.

271 [650] *Dendroica tigrina* (Gmel.).

CAPE MAY WARBLER.

Rare transient visitor ; May ; August 18 to September.

There is a specimen of the Cape May Warbler in the collection of the Boston Society of Natural History, labeled Lynn, which is perhaps the one recorded by Putnam¹ as taken in Lynn in 1847, by Jillson. At the Peabody Academy are two specimens from Essex County, one taken August 18th, 1880, the other in May, 1878.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 207, 1856.

272 [652] *Dendroica æstiva* (Gmel.).

YELLOW WARBLER.

Abundant summer resident ; May 2 to September 26 ; average date of arrival for six years, May 3 to 4.

Eggs: May 27 to June 13.

Although generally a bird of gardens and orchards near houses, the Yellow Warbler is very common in the wooded islands of the Wenham and Topsfield marshes and adds its very varied songs to the confusing chorus of warbler voices to be heard in that region. It nests there on the edges of the woods in bushes sometimes overhanging the waters of the Ipswich River.

273 [654] *Dendroica cærulescens* (Gmel.).

BLACK-THROATED BLUE WARBLER.

Common transient visitor ; May 11 to May 24 ; September 27 to October 8.

There is no neater and more strikingly beautiful bird than the male Black-throated Blue Warbler, and none more demurely and obscurely dressed than his spouse. His song is loud, searching, and hurried. I have heard the same bird sing *tree tree tree treeep* and a little later *wheet wheet wheet wheee*.

274 [655] *Dendroica coronata* (Linn.).

MYRTLE WARBLER ; YELLOW-RUMPED WARBLER.

Abundant transient visitor, not uncommon winter resident ; August 19 to May 21 ; average dates of migration, April 17 to May 15 ; September 20 to November 1.

The August dates are probably of early migrants, although my earliest date, August 19th, 1878, records an adult female with breast devoid of feathers as if recently incubating, shot in some bushes near the ocean at Magnolia.

The interesting fact about this Warbler is that at the present day, at least,

it habitually spends the winters in Essex County. This it is enabled to do from its habit of eating seeds, chiefly those of the bayberry or myrtle from which the bird takes its name. These berries are eaten by both old and young birds even when insects are abundant, and during the colder months they appear to form the entire diet. Of fifteen stomachs examined by me, one taken August 19th contained both seeds and insects; of four in September, two contained insects alone, and two seeds and insects; of three in October, two contained insects and one seeds and insects; of two in December, both contained seeds only, while of five taken in the spring, all contained insects only. It is interesting to note that Mr. B. S. Bowdish¹ states that he has found seeds in the stomachs of Yellow-rumped Warblers in Cuba, where insect life is of course very abundant. It would seem, therefore, that a habit acquired by necessity may be retained by choice, or that the adaptable character of the bird which prompted it to try seeds as a food in the Tropics enabled it to stay in an insectless region. Mr. Brewster² has reported these versatile birds as feeding on fallen and partly crushed oranges in Florida.

How long the Yellow-rumped Warbler has spent the winters as far north as Essex County I do not know. Nuttall³ says: "And being a hardy species, passing parties continue with us in garden and woods till about the close of November, feeding now almost exclusively on the myrtle-wax berries (*Myrica cerifera*), or on those of the Virginian juniper." Mr. C. J. Maynard tells me that he never found the bird in winter in Essex County from 1868 to 1872. Allen⁴ in his annotated list, in 1878, says: "A few known to winter on Cape Cod." Minot,⁵ writing in 1877, says: "I have several times, in December and January, found them near Boston, in swamps, where they were feeding upon the berries, and also among cedars." Putnam,⁶ in 1856, in his Essex County list, says: "Common in Spring and Autumn. Rare in winter." Mr. John Murdoch,⁷ in 1878, in an article on the Effects of the Warm Winter on the Migration of Birds, says: "Mr. [C. W.] Townsend also saw as late as the first of January small flocks of the Yellow-rumped Warbler . . . in the woods, near the shore, at Magnolia, Mass. This bird has been known to linger as late as the early part of December on Cape Cod, but never so far north of the Cape." J. A. Jeffries,⁸

¹ B. S. Bowdish: Auk, vol. 20, p. 195, 1903.

² Wm. Brewster: Auk, vol. 6, p. 279, 1889.

³ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 362, 1832.

⁴ J. A. Allen: Bull. Essex Inst., vol. 10, p. 13, 1878.

⁵ H. D. Minot: The Land-birds and Game-birds of New England, p. 125, 1877.

⁶ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 207, 1856.

⁷ John Murdoch: Bull. Nuttall Orn. Club, vol. 3, p. 76, 1878.

⁸ J. A. Jeffries: Bull. Nuttall Orn. Club, vol. 4, p. 118, 1879.

in 1879, writes that he has been in the habit of finding these birds at Swampscott in December, for the three previous winters, but in the winter of 1879, a severe one, he had found them also in numbers in February. Mr. W. A. Jeffries tells me that he had found them at Swampscott in winter as long ago as 1874. Besides finding them at Magnolia in winter in 1878, I have found them at Ipswich in the pitch pine thickets among the dunes since I have visited that region in winter during the last eight years. I have also usually found a few in the birch thickets at the southern end of the dunes and occasionally a few in the woods recently planted on Castle Hill. In all these regions bayberries are plentiful. It is not unusual to find twenty or thirty of these Warblers there in midwinter. As a rule the winter birds appear to go north a week or two before the wave of migrants from the south.

Mr. C. J. Maynard, in a recent interesting letter to me, explains why Yellow-rumped Warblers were not to be found in the early days, 1868 to 1872, in the Ipswich dunes. He says: "When I first knew the Ipswich sand dunes there was not a thicket of any description on them. Consequently the Yellow-rumps would not have been there. Had they been anywhere in Ipswich at that time I think I should have found them. It has always been a question with me, ever since it has been discovered that these birds wintered with us, as to whether they have not been learning to remain north. I think I may safely say that these birds did not occur in winter anywhere in the section of this State over which I collected in winter."

In the severe winter of 1904, when the cold was prolonged and intense, and the snow covered the ground to such a depth that most of the bayberry bushes were buried, the Yellow-rumped Warblers fared ill. On January 4th, 1904, I picked up the frozen form of one of these little birds with wings spread as he had fluttered down from a tree near the Ipswich dunes. From then on, until April 17th, with the arrival of the spring migrants, none of these birds were to be seen in the thickets of the dunes. Whether they survived the winter in more protected situations I do not know.

275 [657] *Dendroica maculosa* (Gmel.).

MAGNOLIA WARBLER; BLACK AND YELLOW WARBLER.

Common transient visitor; May 7 to May 30; September 13 to October 8.

My latest date records a young bird of this species that dashed itself to death against one of the lights of Thatcher's Island, in 1904. One is filled with

wonder and pity when he thinks of young birds, whose brief lives have been passed in sheltered woods, struggling south in the dark nights along rocky and wave-beaten coasts.

[658] *Dendroica cerulea* (Wils.). CERULEAN WARBLER. This is entered in Putnam's¹ list, but it is possible that it was confused with the *D. caerulescens*, Black-throated Blue Warbler. According to Howe and Allen there is only one authentic record of the Cerulean Warbler for the State, namely, of a female taken at Cohasset, in 1874.

276 [659] *Dendroica pensylvanica* (Linn.).

CHESTNUT-SIDED WARBLER.

Very common summer resident; May 6 to September; average date of arrival for seven years, May 10.

Eggs: May 29 to June 15.

This Warbler illustrates very well the difference in the method of studying birds now from that of 1876, when I first made its acquaintance at Magnolia. Then, field-glasses were not thought of, and with Samuels' Birds of New England for a guide, a gun was necessary as an introduction. At that time I entered in my note-book, probably after a long chase, that the common song of the Chestnut-sided Warbler sounded like "*Don't you wish you could catch me*," whereas now-a-days with field-glasses and delightful bird-books the song is rendered "*Very very glad to meet you*."² No doubt the bird's opinion of the student has changed accordingly!

The other song of this Warbler is short and rambling, at times suggestive of a feeble Purple Finch.

277 [660] *Dendroica castanea* (Wils.).

BAY-BREASTED WARBLER.

Rare transient visitor; May 20 to —; September — to September 22.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 207, 1856.

² Ralph Hoffmann: A Guide to the Birds of New England and Eastern New York, p. 118, 1904.

278 [661] *Dendroica striata* (Forst.).

BLACK-POLL WARBLER.

Abundant transient visitor; May 9 to June 1; September 4 to October 31.

Next to the Yellow-rumped Warbler this is our most abundant autumn migrant among the Warblers. It swarms at times among the groves in the sand dunes and its familiar note is frequently heard as it flies over at night. The birds are generally very fat both in the spring and in the autumn.

279 [662] *Dendroica blackburniæ* (Gmel.).

BLACKBURNIAN WARBLER.

Rare summer resident, not uncommon transient visitor; May 15 to September.

Eggs: June 21.

This Warbler breeds sparingly in various parts of the County, as at Lynnfield, Middleton, and Andover. Mr. J. A. Farley¹ records the finding of a nest of this species on June 21st, 1901, in Lynnfield, where he states that it is a rare but regular breeder. "The nest was at the end of a long branch of a hemlock, being 18 feet out from the trunk and 30 feet from the ground. Before any attempt was made to crawl out on the branch, the female, alarmed doubtless by a slight movement of the limb, suddenly tumbled out of the nest and fell, in fluttering, fledgling style, straight down through the foliage to the ground, recovering herself at the last moment before touching the earth and flying up into the underbrush. The helpless way in which she fell led me to believe for a moment that a full-grown young bird had dropped out of the nest. Even when there were young in a nest, I never before noticed such behavior on the part of a tree warbler nesting at such a height." The nest was "composed of fine hemlock twigs and lined with a few pine needles. It was set firmly in among twigs and was beautifully concealed from view above by a long, full-leaved, horizontal spray, which arching over within two inches of the structure, made a miniature A-tent for the sitting bird."

¹ J. A. Farley: Auk, vol. 18, p. 399, 1901.

280 [667] *Dendroica virens* (Gmel.).

BLACK-THROATED GREEN WARBLER.

Very common summer resident ; May 1 to October 15 ; average date of arrival for eight years, May 4.

Eggs: May 30 to June 17.

All the Warblers vary considerably in their songs, many having two songs quite unlike. In the case of this Warbler, the variations are less marked, but on one occasion I heard an interesting song which I at last traced to a Black-throated Green Warbler. The bird was sitting in a small evergreen and unless I had actually seen him sing, I should never have supposed it was produced by this species, as it was totally unlike the usual song. The first two notes were whistled quite clearly, and the bird seemed to say *whoit whoit sweet sweetsby*. The common song, *see see, se, se, se*, always brings with it the breath of white pines, and one generally takes the song on faith that the bird is there, for it is difficult to see the singer in their dark tops.

281 [671] *Dendroica vigorsii* (Aud.).

PINE WARBLER.

Common summer resident ; April 11 to October 31.

Eggs: May 15 to June 16.

There are many groves of pitch pines in Essex County, some of these, as at Magnolia, close to the sea, and here it is that the Pine Warbler makes its home.

282 [672] *Dendroica palmarum* (Gmel.).

PALM WARBLER ; RED-POLL WARBLER.

Rare autumn transient visitor ; September 26 to October 4.

Mr. Ralph Hoffmann saw a bird of this species at Ipswich on September 26th, 1903. The next day I saw one, perhaps the same bird. Again, on Octo-

ber 4th, 1903, I watched one within ten paces, and could clearly distinguish the yellow lower tail-coverts and dirty white breast and abdomen as well as the chestnut crown.

283 [672a] *Dendroica palmarum hypochrysea* Ridgw.

YELLOW PALM WARBLER; YELLOW RED-POLL.

Abundant transient visitor; April 13 to May 6 (May 21); October 14 to October 26; average date of arrival in the spring for eight years, April 19.

The unusually late date, May 21st, was in 1904, when Mr. Horace W. Wright saw one of these birds at Ipswich. The Yellow Palm Warbler is somewhat irregular in the autumn migrations, at times abundant, at times hardly showing itself. On October 14th, 1900, in a violent northeast storm with rain, I found the Ipswich dunes swarming with these birds. On April 19th, 1904, I found one at Thatcher's Island that had killed itself during the night by striking one of the lights.

284 [673] *Dendroica discolor* (Vieill.).

PRAIRIE WARBLER.

Common summer resident, locally; May 16 to September 25.

Eggs: May 29 to June 12.

In the dry pastures of Swampscott with their growth of barberry bushes and junipers, the Prairie Warbler is found as a summer resident. I have found it in September among the dunes at Ipswich.

285 [674] *Seiurus aurocapillus* (Linn.).

OVEN-BIRD.

Common summer resident; May 3 to September; average date of arrival for ten years, May 9.

Eggs: May 17 to July 8.

The frequency with which the Oven-bird sings at night has already been noted (see page 46).

On July 28th, 1904, I found an Oven-bird in some bushes on a bare hillside near the sea at Ipswich, a region far from the breeding haunts of this common species. It was evidently one of the early migrants from the north, and during the previous night, which I had spent on the beach, the voices of numerous small birds flying over could be heard with frequency from shortly after sunset to just before sunrise. We often do not appreciate how early the southern migration begins (see page 28).

286 [675] *Seiurus noveboracensis* (Gmel.).

WATER-THRUSH.

Common transient visitor; May 10 to 24; August 11 to September 22.

The Water-Thrush is common during the migrations near the upper reaches of the Ipswich River, and near all fresh-water swampy ponds and rivers. I have also seen it in the bogs of the sand dunes, on the islands in the salt marshes, and once walking on the eel-grass at low tide in one of the little creeks.

[677] *Geothlypis formosa* (Wils.). KENTUCKY WARBLER. Dr. Holder¹ includes this bird in his Lynn list for 1846, stating that there is a specimen in the collection of the Lynn Natural History Society. As there is no other record of this bird for the State, and as I was unable to find this specimen in a recent examination of the battered remains of this collection, I have omitted the bird from the list.

287 [678] *Geothlypis agilis* (Wils.).

CONNECTICUT WARBLER.

Rare autumnal transient visitor; September 17.

There are three of these Warblers in the collection of the Peabody Academy and one in that of the late Dr. J. A. Jeffries. The latter is a male taken at Swampscott, September 17th, 1887. The dates of the others are not given, with one exception. This bird was taken in September, 1856.

¹ J. B. Holder: Catalogue of Birds Noticed in the Vicinity of Lynn, during the Years 1844-'5-'6, p. 2, 1846.

288 [679] *Geothlypis philadelphia* (Wils.).

MOURNING WARBLER.

Very rare transient visitor ; May and September.

Mr. G. O. Welch tells me that several birds of this species have been taken in Essex County. He heard its characteristic song in Lynnfield about fifteen years ago in the spring, and his companion, Mr. Moon, shot the bird. Mr. E. M. Haskell has a specimen in his collection taken by him in Lynn in May, 1882.

289 [681d] *Geothlypis trichas brachidactyla* (Swains.).

NORTHERN YELLOWTHROAT ; MARYLAND YELLOWTHROAT.

Abundant summer resident ; May 6 to October 19 (December 6).

Eggs: May 24 to June 13.

I found a Maryland Yellowthroat on December 6th, 1903, in the sand dunes just back of Ipswich Beach, among some bayberry bushes and golden-rod stalks. There was about an inch of snow on the ground and the thermometer early in the morning was only 15° Far. The bird proved to be a young male, quite fat, with its stomach filled with insects, mostly beetles and flies, and a few small seeds. Its plumage was interesting, as it had already partially assumed the first nuptial plumage.

It is interesting to speculate as to what might have been the fate of this young bird had he not been shot. He had evidently been entirely deserted by his companions and it is very doubtful whether he could have found his way south, and still more doubtful if he could have survived the winter in the north.

290 [683] *Icteria virens* (Linn.).

YELLOW-BREASTED CHAT.

Not uncommon local summer resident ; May 10 to September.

Eggs: May 30 to June 18.

The Yellow-breasted Chat is an example of a bird of the Upper Austral zone that has extended its breeding range into Essex County in the Transition zone. Dr. Holder,¹ in 1846, mentions it in his list of birds from Lynn and vicinity. Putnam,² in 1856, notes it in Essex County as: "Summer visitant. Rare." Maynard³ says of eastern Massachusetts that it is an "exceedingly rare summer visitor. Shot a male . . . in the spring of 1862. This is the only instance recorded of its capture in this locality."

In June, 1877, Mr. W. A. Jeffries and his brother, the late Dr. J. A. Jeffries, discovered at Swampscott a pair of Chats with a nest of young, and in later years found them breeding regularly. A valuable paper on the subject was read by Mr. W. A. Jeffries before the Nuttall Ornithological Club on December 2d, 1889, and he has kindly allowed me to make extracts from it here. He says: "From 1881 to the present time, we have found Chats breeding every year. Most of our birds were in Swampscott, but several pairs have been found in Lynn and Salem not far from the Swampscott line. The number of pairs seen in a year breeding has varied from six to twelve. We have found four nests and six pairs of birds in one day without making a special search for them." He also says that Mr. Bradford Torrey found them breeding in Saugus as well as in several neighboring towns outside the County. Mr. Jeffries states that the Chat, while common to the south and along Long Island Sound, extending up the Connecticut Valley to Massachusetts, is not known to breed regularly in any numbers near Boston, until we come to the colonies of Swampscott and Saugus. "Thus we here have an interesting case of a species with a distinctly more southern breeding range, sending an advance guard well beyond its usual range, while in the interspace it does not appear to breed except sporadically."

"Will it spread from this northern colony or be driven back? This to me is a question of much interest. It is certainly much less rare now than in 1877." Mr. Jeffries tells me that the bird has decreased in numbers during the last few years owing to the building up of the country, to the clearing away of the undergrowth by the Gypsy Moth Commission, and to the indiscriminate shooting by Italians. "We have found the Chat in Swampscott from May 10th to 15th, although it probably reaches us before this. It makes a short season with us, as it disappears early in September."

In speaking of the localities about Swampscott in which the birds are found, he says: "This locality presents an uneven surface,—low rounded hills

¹ J. B. Holder: Catalogue of Birds Noticed in the Vicinity of Lynn, during the Years 1844-'5-'6, p. 5, 1846.

² F. W. Putnam: Proc. Essex Inst., vol. 1, p. 213, 1856.

³ C. J. Maynard: The Naturalist's Guide, p. 99, 1870.

divided by narrow winding valleys or 'runs,' nearly all of which carry small streams or are moist at the least. The larger, flat surfaces away from the shore caused by filling in of old pond-basins are, at the present day, either grass fields, or, if left wild, maple swamps, in neither of which Chats are to be expected. The dry, bare, upland pasture land with its barberry clumps and ground junipers may also be disregarded. In moist corners of old fields bordering on the woods, where, protected from the winds and encouraged by ample moisture and the warm sun, vegetation is at its best, or else at the end or side of a 'run,' our Chats are usually found, no matter how near to a road or house. We have found a Chat's nest within twenty feet of the highroad. One pair has bred for ten years in an old lot just back of a cluster of cottages. Children are continually at play in this lot, and yet the Chats come year after year to this old home, although seemingly equally good and quiet spots are near at hand."

"For a building site the Chat selects almost any deciduous bush, not always a thick one,—once an old burnt bush was taken. The bush usually stands on the edge of a clump. I have not met with Chats nesting in tangles of brush and smilax, as they are stated to do in the South. The nest is well concealed from nearly every side, yet from the exposed quarter it can frequently be seen for forty feet. The height of the nest from the ground is from two to four feet. One nest found on June 12th, 1881, was placed in a clump of shoots where they started from an old stump flush with the ground, such as a Brown Thrush would have built in. One second clutch of three eggs we have found, all others were of four each.

The nest is rather loosely made, outwardly of coarse grasses, weeds, and pieces of bark, inside this a body of dried leaves and then a lining of fine grass or weeds. It is quite large and deeply hollowed The birds must mate as soon as they arrive, and build at once, as nests with full sets are sometimes found the last of May While it is impossible to prove that the same pair of Chats returns year after year to the same spot, yet this much we can state: namely, that year after year a pair of Chats comes to a fixed locality, and each year a new nest is built, often not fifty feet from the site of the previous year's nest. One large field of about twenty acres is seemingly good building ground for Chats throughout; for many years two pairs of Chats have built in this field, but invariably in one corner and careful search has failed to reward us with a nest in any other part of this field. Several nests have been found in isolated spots one year, and, although not disturbed by us, the bird did not return the following year The young once hatched, the birds are quiet and lost to sight, soon taking their way to the far South."

Mr. H. A. Purdie tells me that he has found the Chat in the breeding season in Essex.

291 [685] **Wilsonia pusilla** (Wils.).

WILSON'S WARBLER.

Uncommon transient visitor ; May — to 30 ; September 13 to 27.

292 [686] **Wilsonia canadensis** (Linn.).

CANADIAN WARBLER.

Common transient visitor, rare summer resident ; May 16 to June 2 ; August to September 13.

Dr. T. M. Brewer¹ stated that the Canadian Warbler bred every summer in Essex County and that he had two sets of eggs taken in Lynn. I found the bird on June 2d, 1877, at Magnolia, and Mr. Hoffmann found one singing there on June 11th, 1893. It is an example of a bird of the Canadian zone breeding in the County.

293 [687] **Setophaga ruticilla** (Linn.).

AMERICAN REDSTART.

Abundant summer resident ; May 4 to September 21.

Eggs : May 29 to June 21.

The abundance of this species and the great individual variation in its song often make it a nuisance to the ornithologist who may be temporarily misled in his search for rare Warblers. "The Little Torch" is, however, easily seen, and we can readily pardon the interruption. It is a help to me to think of its song as *sibilant* and *insistent*, which it generally is. Mr. F. B. McKechnie tells me that he saw a Redstart just outside the County line at Lowell, on October 7th, 1904.

¹T. M. Brewer : Bull. Nuttall Orn. Club, vol. 3, p. 139, 1878.

294 [697] *Anthus pensilvanicus* (Lath.).

AMERICAN PIPIT; TITLARK.

Abundant transient visitor in the autumn, rare in the spring; May 9, May 10, (June 8); September 10 to November 20 (January 4).

My spring records of this bird are few. On May 9th, 1893, Mr. J. A. Farley saw a flock at Lynnfield; ten years later, on May 10th, 1903, I saw a flock of seven in the marshes at Ipswich. On June 8th, 1878, a single bird was shot by Mr. W. A. Jeffries on a small island off Swampscott.¹ The reproductive organs suggested breeding. Pipits are generally gone by the 7th of November, but Mr. F. B. McKechnie shot one at Ipswich on November 20th, 1903, and on January 4th, 1878, a small flock was observed at Newburyport.²

From the middle of September to the end of the first week in November this bird is to be found in flocks of from ten to one hundred or more among the sand dunes, on the beaches, in the salt marshes, or in the open fields, generally near the coast. I have seen them on the beach walking on the edges of shallow pools of water, wetting their feet but not their feathers. In ploughed fields it is very difficult to see them, so well do they match in color the ground. They occasionally alight on sticks or old roots in the fields and dunes, and rarely in trees. I have, however, seen several of a flock alight in tall trees. They walk rapidly on the ground, — I have never seen them hop, — and they have a habit of wagging their tails up and down, both while walking and when standing still. When startled, they often fly straight up. Their flight in flocks is in loose order, irregular and undulating and as fitful as that of the Snow Bunting.

Their call notes resemble closely those of the Horned Larks but are generally softer and less sibilant, — *sect-see whit*, — and are emitted constantly while the bird is on the wing, and occasionally from the ground. It is, however, necessary to study closely the notes of these two birds in order to distinguish them. Their smaller size, more slender form, and larger amount of white in the tail serve to distinguish them from the Horned Larks. Their habit of wagging the tail is distinctive.

¹ T. M. Brewer: Bull. Nuttall Orn. Club, vol. 3, p. 194, 1878.

² T. M. Brewer: Proc. Boston Soc. Nat. Hist., vol. 19, p. 302, 1878.

295 [703] *Mimus polyglottos* (Linn.).

MOCKINGBIRD.

Accidental visitor from the south.

One was taken at Nahant in June, 1852.¹ There are two specimens in the Peabody Academy collection: one, a male, taken in Lynn on April 4th, 1893, by C. E. Chase; another bird was seen. The second specimen has soiled tail feathers, and was probably an escaped cage bird. It was taken by R. O. Wentworth "before 1895," at Nahant Beach. A pair was seen and one of the birds taken at Ipswich on April 4th, 1893.² A Mockingbird was seen at Nahant by Mr. H. W. King³ on December 28th, 1903. Mr. King kindly wrote me on March 12th, 1904, that the bird was first seen by Mr. Horace W. Wright, Mr. Wellman, and himself and that they examined it closely but could see no disfigurements which would lead them to suppose that it was an escaped captive. On January 30th, 1904, Mr. Wright saw the bird for a second time.

296 [704] *Galeoscoptes carolinensis* (Linn.).

CATBIRD.

Very common summer resident; April 27 to October 13; average date of arrival for eight years, May 8.

Eggs: May 23 to June 20.

One of the best imitations I have seen this mimic give was that of a Kingfisher, for the actions as well as the notes were copied. One July day on the Ipswich River, a Catbird swooped down and flew across in front of my canoe with such a perfect Kingfisher rattle and action that for a moment I was deceived.

¹ F. W. Putnam: Proc. Essex Inst., vol. 1, p. 224, 1856.

² N. Vickary: Ornithologist and Oologist, vol. 18, p. 51, 1893.

³ H. W. King: Bird-Lore, vol. 6, p. 8, 1904.

297 [705] *Toxostoma rufum* (Linn.).

BROWN THRASHER ; BROWN THRUSH.

Common summer resident ; (April 6) May 1 to October 1 (October 26).

Eggs : May 22 to June 21.

Brown Thrashers are local in their distribution, and although I used to find them commonly in the scrubby fields back of Coffin's Beach in the late seventies, I never found them at Magnolia. They are common in most parts of the County where there are overgrown pastures and there are many such. Near the sea at Ipswich they are more common than the Catbird.

298 [718] *Thryothorus ludovicianus* (Lath.).

CAROLINA WREN.

Accidental visitor from the south.

Dr. T. M. Brewer¹ gives the only record of this bird for the County. He wrote: "My friend, Mr. Geo. O. Welch, secured a fine specimen of *Thryothorus ludovicianus* in Lynn, on the 6th of July [1878]. The imprudent stranger ventured within an easy range of his work-room window, in the very heart of the city, and now remains as tangible evidence of its right to a place on the list of the birds of this State as well as New England." The specimen is now in the collection of the Boston Society of Natural History.

Since then there have been a number of other records for the State but none from Essex County, although it has been taken farther north at Rye Beach by Mr. H. M. Spelman.

299 [721] *Troglodytes ædon* Vieill.

HOUSE WREN.

Uncommon and local summer resident ; May 8 to September 25.

Eggs : June 5.

¹ T. M. Brewer: Bull. Nuttall Orn. Club, vol. 3, p. 193, 1878.

I have records for this bird from Saugus, Lynnfield, Swampscott, Hamilton, and Ipswich. The bird has, however, diminished very much in numbers of late years, and is now extirpated in places that it formerly frequented.

Mr. W. A. Jeffries records a pair seen building their nest in a wooden pump in constant use in Swampscott on May 19th, 1878. The birds would alight on the handle, run along it and deposit their sticks in the hole at the base of the handle. The gardener reported that the water had been full of sticks for a week or more, but that the birds replaced them as fast as they were washed out. Mr. Jeffries had the handle nailed fast and the nest was finished on May 26th. On June 5th, there were six eggs.

300 [722] *Olbiorchilus hiemalis* (Vieill.).

WINTER WREN.

Uncommon transient visitor, very rare summer resident; April 4 to May (June); September 2 to October 19.

I have no record for this bird in Essex County in winter. The only summer record is that reported by Mr. Brewster¹ who says that Mr. G. O. Welch told him that a pair once passed the breeding season in a hemlock grove near Lynn. He watched them from the middle of May to June 10th when he shot both birds. Their actions showed they were nesting.

301 [724] *Cistothorus stellaris* (Licht.).

SHORT-BILLED MARSH WREN.

Common summer resident, locally; May 6 to September 18.

Eggs: June 16 to July 7.

There is a meadow in Hamilton about half a mile from the Long-billed Marsh Wrens' colony where I have found this little bird. The meadow is moistened by a brook, and besides the short native grasses and sedges, timothy and clover intrude. There are no tall grasses nor rushes. It is probable that there are a number of such places in the County. Mr. Farley reports it from

¹ Wm. Brewster: Bull. Nuttall Orn. Club, vol. 8, p. 119, 1883.

Saugus, Lynnfield, and Hamilton. Although the unmusical song or *chattering* is often heard, the bird is difficult to see. One may note the exact spot where a bird has dropped into the grass, yet on going to the place the bird cannot be flushed.

302 [725] *Telmatodytes palustris* (Wils.).

LONG-BILLED MARSH WREN.

Abundant summer resident, locally; May 15 to October 5 (November 5).

Eggs: June 5 to August.

The latest date, November 5th, records a bird seen in 1904, by Mr. H. W. Wright and Mr. M. C. Blake among wild rose bushes on the eastern point of Nahant.

There are a number of places in the County where the conditions are favorable for this fascinating bird,—namely, fresh marshes with a tall growth of reeds and grasses (see page 43), and my studies of them have been made in the populous wren colonies of the Ipswich River in Topsfield and Wenham.

That these Wrens sing chiefly during the evening, night, and early morning is evident (see page 45), but their energy is such that they sing throughout the day as well. Their songs may be heard from their arrival until the middle or end of August. Long-billed Marsh Wrens are more often heard than seen, but they occasionally appear for a brief moment. They sit still or rather cling to the grass and sing, or they sing as they progress through the grass, or they indulge in their flight song which lifts them straight up from six to twelve feet and drops them fluttering and pouring out song in the descent. The song begins with a scrape like the tuning of a violin followed by a trill which bubbles, gurgles, or rattles, depending no doubt on the skill or mood of the performer; at times liquid and musical, at other times rattling and harsh, but always vigorous. It ends abruptly but is generally followed by a short musical whistle or a trill, as if the Wren were drawing in its breath after its efforts. I have heard one sing fifteen times in a minute. The bird often reminds me of a mechanical musical toy wound up to go off at frequent intervals. Their scolding notes at times resemble those of their neighbors, the Red-winged Blackbirds.

Essex County is probably the most northern locality that the Long-billed Marsh Wren reaches. Neither Mr. Knight in his *Birds of Maine* nor Dr. Allen in his *Birds of New Hampshire* mentions the bird.

303 [726] *Certhia familiaris americana* (Bonap.).

BROWN CREEPER.

Permanent resident, very rare in summer, uncommon in winter, common transient visitor; September 21 to May 1; summer.

Eggs: May 16.

Dr. T. M. Brewer,¹ in a paper written in 1879, on the Brown Creeper, says: "Since then I have known of its nesting in northern New Hampshire, in Maine and more recently, near Lynn, Mass." With the exception of this case of Dr. Brewer's, the Brown Creeper has not been reported as nesting in Essex County and has generally been considered a bird of the Canadian zone. On May 11th, 1904, however, I found a pair of these birds in Hamilton in mixed woods of white and pitch pines, oaks, and birches on the border of a red maple swamp. I stood still and looked about for a probable nesting site. Within a few yards of where I stood and close to the border of the swamp was a dead and decayed trunk of a pitch pine that had broken off and was leaning at an angle of 45° against a white oak. The bark of the pine was loose and had fallen off in several places. The male Creeper in the meanwhile was singing and occasionally flying to the female in play. She soon seized a pine needle, flew directly to the dead pine and disappeared in a crack under the bark about ten feet from the ground. The birds were very tame, flying close to me, and every now and then the female would interrupt her search for insects by seizing a pine needle and flying with it to the crack in the bark. Some of the materials of the nest protruded from the crack lower down, and hooking a piece down with a stick, I found them to consist of strips of bark, pine needles, cocoons, pieces of decayed wood, and bits of branches of considerable size, all irregularly heaped together.

A week later the female was evidently sitting on her eggs but as an attempt to climb the dead tree might have broken it down and destroyed the nest, I left it undisturbed. Incubation apparently went on normally and on June 24th I came across the family of old and young nearly half a mile from the nest, which was then deserted.

One would hardly think of looking for this delicate, tree-loving bird on Thatcher's Island, desolate, treeless, and wind-swept, yet on September 24th, 1904, I found there a couple of these little birds creeping on the steep surfaces of the rocks. Observations like this bring to one's mind very forcibly the fact that the rugged coast line is a great highway of bird migration.

¹ T. M. Brewer: Bull. Nuttall Orn. Club, vol. 4, p. 88, 1879.

304 [727] *Sitta carolinensis* Lath.

WHITE-BREASTED NUTHATCH.

Permanent resident, rare in summer, common in autumn; uncommon in spring and winter.

Eggs: April 3 to May.

I have records of the breeding of the White-breasted Nuthatch in Bradford, and of birds seen in the breeding season in Andover, and I have seen them myself in Hamilton at that time.

Their habit, from which they derive their name, of "hatching" or pounding a nut as with a hatchet, I have twice observed. On one occasion, when the bird was disturbed, it flew off with the acorn into which it had thrust its bill. Their object was probably to obtain the larvæ within.

305 [728] *Sitta canadensis* Linn.

RED-BREASTED NUTHATCH.

Irregular and at times abundant autumn transient visitor, less common in winter and spring, rare summer resident; August 15 to May 16.

Eggs: May 23.

Mr. C. E. Brown, of Beverly, has the eggs of this bird taken by his cousin, Mr. F. A. Brown, in Beverly on May 23d, 1889.¹ The nest was made of cedar bark and a few grasses and was in a maple stub. The birds were seen several times. Mr. J. A. Farley tells me that he saw a pair with full-grown young several times in June, 1903, in Reading just outside the southern border of Essex County. I have seen the bird as late as May 16th, 1900, and May 10th, 1903, in Ipswich, but have not found the nest.

I have always thought that this bird was fond of the vicinity of the sea. My first acquaintance with it was on August 21st, 1878, when I discovered one creeping on the roof of a fish-house at Magnolia. The next day I found one creeping on the barnacle- and seaweed-covered rocks at low tide on Kettle Island. From there it flew to the higher rocks and crept on their smooth faces.

¹ Part of Mr. C. E. Brown's collection is now deposited with the Peabody Academy.

From August 15th to September 5th, 1899, they were especially common in the pine thickets in the Ipswich dunes, and one or two are generally to be found there every winter.

306 [735] **Parus atricapillus** Linn.

CHICKADEE.

Very common permanent resident, especially common in winter.

Eggs: May 4 to June 21.

It is always a pleasure to find this cheerful little bird in the pitch pine thickets in the Ipswich dunes. Here in this refuge from the chilling gales, one may find him throughout the winter, in company with Yellow-rumped Warblers, busily engaged in gleaning the trees for larvæ and in eating bayberries.

307 [740] **Parus hudsonicus** Forst.

HUDSONIAN CHICKADEE.

Accidental visitor from the north.

I know of but two instances of the occurrence of this bird in Essex County. Dearborn does not include it in his *Birds of Durham and Vicinity*, a region just north of the County, but there are a number of records for Massachusetts outside of Essex County, one from as far south as Plymouth County.

Mr. A. A. Eaton of Seabrook, New Hampshire, writes me that in the latter part of January, 1890, in a grove of pitch pines in Salisbury, he heard "a wheezy Chickadee." He shot it and it proved to be *hudsonicus*. The specimen was unfortunately destroyed by mice. This is the same bird as recorded by G. M. Allen¹ as shot February 15th, 1890. Mr. Horace W. Wright² wrote me in November, 1904, that on the 12th of that month he, with Mr. M. C. Blake, fully identified a Hudsonian Chickadee in the cultivated larches and spruces on Castle Hill, Ipswich. They saw him and heard him give his characteristic calls.

¹ G. M. Allen: *Proc. Manchester Inst. Arts and Sciences*, vol. 4, p. 178, 1903 [= 1904].

² H. W. Wright: *Auk*, vol. 22, p. 87, 1905.

308 [748] *Regulus satrapa* Licht.

GOLDEN-CROWNED KINGLET.

Abundant transient visitor, common in winter, very rare in summer; September 25 to April; (summer).

The nest of this bird containing three eggs was found by Mr. N. Vickary in a spruce tree in Lynn in May, 1889.¹ The nest is now in the collection of Mr. William Brewster.

309 [749] *Regulus calendula* (Linn.).

RUBY-CROWNED KINGLET.

Common transient visitor; April 7 to May 9; October 4 to October 29.

It is always a privilege to hear the tripartite song of the Ruby-crowned Kinglet. The first part is lisping like the song of the Black and White Warbler, the second recalls some of the notes of the Robin but is more melodious and most interesting, while the third part, the climax, is a succession of delightfully musical triplets with rising inflection. The three parts follow each other in quick succession, and were not the bird seen, one could imagine a Warbler, a Robin, and an expert Goldfinch all performing. Still another bird, namely an Oriole, is suggested by the scolding, chattering note of this Kinglet.

310 [751] *Polioptila cærulea* (Linn.).

BLUE-GRAY GNATCATCHER.

Accidental visitor from the south.

An immature female of this species was taken at Magnolia by Mr. Outram Bangs on August 27th, 1879, and the specimen is now in his collection. The bird was believed to have been "blown north of its usual range by a severe gale, which occurred a few days previous to its capture."² Mr. Francis H.

¹ N. Vickary: Ornithologist and Oologist, vol. 14, p. 95, 1889.

² Ruthven Deane: Bull. Nuttall Orn. Club, vol. 5, p. 47, 1880.

Allen¹ observed one at West Manchester on November 16th, 1902. There are a number of other records of this bird for the State.

311 [755] *Hylocichla mustelina* (Gmel.).

WOOD THRUSH.

Common summer resident; May 11 to September 16; average date of arrival for five years, May 14.

Eggs: May 25 to June 15.

I cannot pass this bird by without adding a slight tribute to the beauty of its song. Heard in the depths of the woods in the stillness of a summer's evening or amid the chorus of bird-voices in the early morning, the song of the Wood Thrush is always a source of pure delight.

312 [756] *Hylocichla fuscescens* (Steph.).

WILSON'S THRUSH; VEERY.

Abundant summer resident; May 1 to September 15.

Eggs: May 20 to June 30.

The average date of arrival is about May 7th. Mr. C. E. Brown took one in Beverly, May 1st, 1904, and it is now in the collection of the Boston Society of Natural History.

This is by far the most common of the genus *Hylocichla* in Essex County and its delightful song is to be heard everywhere along the rivers. Dr. T. M. Brewer² reported a nest of this Thrush found in Lynn at a height of twenty-five feet from the ground. Mr. Laurence Brooks, on May 30th, 1904, found at Wenham eight nests of the Wilson's Thrush, all within the space of some two or three acres,—a thrush colony, as it were. The nests were all in or on beech stumps and each contained four eggs. One set had the usual ground color but the eggs were spotted and blotched with brown. In 1902, a Wilson's Thrush built within twelve yards of a camp on an island in the Topsfield marshes. They are usually very tame.

¹ F. H. Allen: Auk, vol. 20, p. 69, 1903.

² T. M. Brewer: Bull. Nuttall Orn. Club, vol. 3, p. 193, 1878.

Besides their delightful song, which is not heard until about a week after the arrival of the birds, and the common exclamations *phew* and *whee*, they also hiss like a Robin, and occasionally chatter in conversational and questioning tones.

313 [757] **Hylocichla aliciae** (Baird).

GRAY-CHEEKED THRUSH.

Rare transient visitor; May (June 18); September to October 5.

There is a specimen of this bird in the collection of the Peabody Academy, labeled Ipswich, June 18th, 1872. It was taken by Mr. Maynard.

314 [757a] **Hylocichla aliciae bicknelli** Ridgw.

BICKNELL'S THRUSH.

Not uncommon transient visitor; May; September 18 to October.

A typical specimen in my collection was taken at Magnolia on September 18th, 1877. It bore for many years the label of the Olive-backed Thrush, as Bicknell's Thrush was not differentiated at that time.

315 [758a] **Hylocichla ustulata swainsonii** (Cab.).

OLIVE-BACKED THRUSH; SWAINSON'S THRUSH.

Common transient visitor; May 12 to June; September 22 to October 2.

316 [759b] **Hylocichla guttata pallasii** (Cab.).

HERMIT THRUSH.

Very common transient visitor, uncommon summer resident; April 13 to May 9; (summer); October 4 to November 3 (winter).

Eggs: June 14.

Mr. J. W. Huntington has watched one spending the present winter near Amesbury, having seen the bird as late as January 27th, 1905.

The Hermit Thrush, which breeds so abundantly in northern New England, is found sparingly in summer in several places in Essex County. There is a nest with eggs of this bird in the collection of the Peabody Academy. It was taken on June 14th, 1868, at North Beverly, by E. P. Emerton. Mr. Welch found it breeding in Lynn.¹ Mr. Hoffmann heard it singing in the deep woods between Gloucester and Magnolia on June 11th, 1893, and I have heard it at this season in Topsfield. Mr. Farley has found it breeding at these stations and also in Essex, Georgetown, and Boxford. I have found Hermit Thrushes during the migrations in such incongruous places as the sand dunes at Ipswich, and on the bare rocky ledges of Thatcher's Island off the end of Cape Ann.

It is always a privilege to hear the beautiful song of the Hermit Thrush. It resembles that of the Wood Thrush but has a more silvery tone, and is to me even more beautiful.

317 [761] *Merula migratoria* (Linn.).

AMERICAN ROBIN.

Permanent resident, abundant in summer, uncommon in winter; average date of spring arrivals for eight years, March 16.

Eggs: May 4 to July 25.

Robins are particularly abundant near the sea, frequenting the dry parts of the beaches, the sand dunes, and the salt marshes. They are very fond of nesting on buildings. I have had for several years three and sometimes four Robins' nests on various parts of my summer house at Ipswich. One nest, in 1904, was balanced on the top of two open blinds where they overlapped. Another has been built on the lintel of the door under the front porch. This latter nest has been occupied, presumably by the same pair, for four successive years, being built up and otherwise repaired a little each year. It is now six inches high. In 1904, a nest under the piazza of one of my neighbors' houses had seven eggs in it, and an eighth was dropped on the ground. It is probable that two females laid their eggs in the nest. The nest was unfortunately deserted as it had to be moved for repairs on the house. A nest was found in 1903, containing three normal and two "runt" eggs. The latter suggested the eggs of the Catbird.

¹ Anon.: Proc. Boston Soc. Nat. Hist., vol. 13, p. 366, 1870.

A partially albino Robin was seen in Ipswich on August 9th, 1901. In the collection of the Peabody Academy there are three partially albino specimens and one complete albino.

318 [763] *Ixoreus naevius* (Gmel.).

VARIED THRUSH.

Accidental visitor from the west.

A specimen, now in the collection of the Boston Society of Natural History, is recorded by Mr. C. J. Maynard as having been taken in Ipswich in December, 1864.¹ This is the only record for New England.

319 [766] *Sialia sialis* (Linn.).

BLUEBIRD.

Common summer resident; March 1 to October 23; average date of arrival for eight years, March 7.

Eggs: April 23 to June 5.

Just outside the County line, in Reading, a pair of Bluebirds built their nest in 1864 in one of the signal balls at the railroad station, and raised two broods of young. The ball was lowered fifty times a day for passing trains, and the birds flew out each time and waited till the ball was raised before returning to their nest.²

¹ C. J. Maynard: *The Naturalist's Guide*, p. 89, 1870.

² Anon.: *Proc. Essex Inst.*, vol. 4, p. cxlix, 1864.

INTRODUCED SPECIES.

1 *Phasianus torquatus* Gmel.

RING PHEASANT.

Common permanent resident.

In 1893, Dr. J. C. Phillips liberated about twenty-five Ring Pheasants at Beverly, and he has liberated others from time to time since. Some ten or fifteen years ago, Mr. J. B. Brown began to set these birds free on his large estate at Castle Hill, Ipswich. At Manchester, Pheasants have been introduced by Mr. James McMillan about seven or eight years ago. The birds have proved very hardy and prolific, and have increased rapidly under the protection of the law. The Annual Report of the Fish and Game Commission for 1904 states that the Pheasant "has increased wonderfully in West Gloucester, Manchester, Essex, Wenham, Danvers, Boxford, Topsfield, and Hamilton." Ipswich should be added to this list of towns.

The birds have a bad reputation among farmers, as they are worse than the Domestic Fowls in scratching up a newly planted garden, and eating the seed. They are said also to peck the corn in the ear. It is a question, however, whether their insect-eating habits do not more than counterbalance this harm. By sportsmen,¹ too, they are heartily disliked as they ruin young dogs by their habit of running, not lying close like the Ruffed Grouse, our prince of game birds. It is possible they may improve in this respect when they have been hunted for some time.

They are common birds at Ipswich near the sea, frequenting the fields and thickets of Castle Hill and the adjoining sand dunes, and visiting all the neighboring fields and gardens. Their tracks in the sand are characteristic, the three toe-marks in front are well spread out and there is a dot behind made by the short hind toe.

The Ring Pheasant is a beautiful bird, whether running on the ground with powerful strides, or sailing meteor-like through the air, showing his blue metallic head, snow-white neck-ring, golden brown back, and long tail. The young birds with their shorter tails are more liable to be mistaken for Ruffed Grouse.

¹ J. C. Phillips: Forest and Stream, vol. 60, p. 10, 1903.

Pheasants croak hoarsely when chasing each other, but all through the spring and early summer one may hear everywhere in the eastern parts of Essex County their *croakings*. These are apt to be overlooked and mistaken for the croakings of barnyard Fowl, but when once recognized they are not easily passed unnoticed. The *crow* consists of two notes, and suggests a very immature rooster with a sore throat. During midsummer the birds are generally silent, but they are sometimes heard again in October.

2 *Passer domesticus* (Linn.).

EUROPEAN HOUSE SPARROW; "ENGLISH SPARROW."

Abundant permanent resident.

This most unfortunate introduction is found abundantly in all the cities, towns, and villages of the County, as well as at many isolated farm-houses. It was introduced into this country, in 1851, at Brooklyn, N. Y., and at Boston, in 1868. Its spread at first was comparatively slow and was limited to the large cities. From 1875 to 1880, I found none of these birds in Magnolia and the neighboring towns where they are now so common. From that time till 1892, I have no record of their spread in Essex County, but the following from my notebook under date of July 13th, 1883, for Arlington Heights, about the same distance from Boston as the southern end of Essex County, is of interest, and illustrates the great change that has come about in the numbers of these birds in a comparatively short time: "English Sparrows are far from uncommon on the hill this year. Last year there were only two or three, and the year before I did not notice any. But this year, besides several which I have seen and heard near the house, I have found a flock of ten or fifteen young birds on the main avenue. Have not seen any away from the houses in the fields as yet."

Although I found them abundant in 1891 in the town of Ipswich, and at the neighboring farms, they had extended but a short distance along the road to the sea, which is some five miles distant. During August and September, however, flocks of fifteen or twenty, mostly immature birds, would extend their flights to the grain-fields, hen-yards, and roads within two or three miles of the sea. In 1901, they began nesting at a farm about a mile from the sea, and the next year all the farms in the vicinity, including the one on Castle Hill were thus invaded. From these farms as centers, flocks of English Sparrows visited the neighboring country, although their numbers in winter were so few that they were hardly ever seen except close to their homes. In November of

1904, however, I found several foraging flocks of fifteen or twenty birds each near Castle Hill.

The hen-yards are the chief feeding ground of these pests in country districts at present, and they descend in swarms to eat the food thrown out there. The amount of damage done by the Sparrows in the grain-fields and fruit-gardens is at present very slight in Essex County, but it is, I think, merely a question of time for them to outgrow the hen-yards. Our chief hope lies in the severe winters. If anyone is inclined to belittle the harm that can be done by this alien, a perusal of the Report on the English Sparrow in North America, published in 1889 by the United States Department of Agriculture, will soon disillusion him.

Wherever they go they take possession of the bird-boxes put up for House Wrens, Bluebirds, Purple Martins, and Tree Swallows, as well as the clay retorts of the Eave Swallows. These are occupied long before the native birds return in the spring. For a year or two the native birds may succeed in driving out the intruder, but each year the contest becomes more unequal, and is finally given up, the native birds seeking some other haunts. I have watched this process go on in Boston in the seventies when Tree Swallows, which at that time commonly built in boxes in back-yards, were gradually but surely driven from their homes. My notebook for those years contains several references to this war between the Swallows and the Sparrows, ending with the final success of the latter. For several years after, the Swallows came back, lingered for a day or two near their old home, but were fiercely attacked by the Sparrows. The beautiful and useful native bird with its fascinating ways and pleasing notes, is permanently replaced by the quarrelsome and noisy foreigner in all cities and towns.

It is, of course, natural that the English Sparrow, having moved into the bird-house in the winter before the arrival of the native occupant, should regard the latter as an intruder and attack him in the defence of his home. I have notes, however, of the English Sparrow actually driving out birds from their nests, and removing the eggs in the case of a Bluebird. I have also seen them attack our native birds, in whose nests they could have no interest. Thus I was listening to a Savanna Sparrow singing in a bush near a farm-house at Ipswich when an English Sparrow flew at him with great viciousness so that he beat a hasty retreat. Another time, a Fox Sparrow was picking up berries under a bush. Every now and then an English Sparrow from a small flock near would fly at him, but he faced the miscreant and drove him off. When, however, the Fox Sparrow turned to fly away, he was pursued by a noisy mob of the aliens and forced to take refuge under a garden seat. Everyone is familiar with the habit of the English Sparrow in following a foraging Robin and seizing the worm before the Robin can swallow it.

English Sparrows, like all animals that have been treated as vermin, are very suspicious and are well supplied with cunning. I have several times placed outside the enclosure the same food which attracted the Sparrows to the hen-yard, with the intention of baiting and shooting them, but they have refused to touch it. After once being shot at, they disappear at the first sight of a gun. The following instance of their cunning is worth relating: I had placed some artificial retort-shaped nests for Eave Swallows on my barn at Ipswich, with the hopes of attracting these birds. In 1904, English Sparrows were seen about my place in the early spring, but they were very wary and attempts to shoot them were unsuccessful. In July, I suspected that they were breeding in one of the artificial nests, but any bird in the vicinity disappeared at my approach. When I ascended to the nests all was quiet, even when I rapped them sharply, and I concluded that I was mistaken. Several days later, however, I concluded to take the nests down, and not until they were removed from their fastening was there any sign of life within. Then a young Sparrow attempted to get out. During all this time no chirping or outcry of any kind was made, and the parents were not to be seen. I found four nearly full-grown young within. These actions on the part of both young and adults were certainly very different from what we should expect in native birds. John Burroughs¹ describes a similar instinct of deception and concealment on the part of the Cowbird. He speaks of finding the nest of a Song Sparrow containing a young Cowbird as well as several young Song Sparrows. On jarring the nest slightly the Sparrows opened their mouths, but the Cowbird lay low.

The English Sparrow is here to stay. It cannot be exterminated, but its numbers should be kept down in country districts by destroying its nests and by the judicious use of the gun.

APOCRYPHAL SPECIES.

1 *Muscicapa minuta* Wils.

SMALL-HEADED FLVCATCHER.

No specimen of this supposed species is extant, and it is known only from

¹ John Burroughs: *Outing*, vol. 45, p. 246, 1904.

the description and figures of Wilson and Audubon. Nuttall¹ reports the taking of a specimen near Salem about 1830, and even as late as 1875 it was reported by Brewer² as having been taken at Wenham.

SUMMARY.

Of the 321 species and subspecies, including the 2 introduced species, I have myself seen 215 alive in Essex County, and have examined specimens from the County of all of these but 2. These 2 are Henslow's Sparrow and Palm Warbler, both of which have been identified by other members of the Club besides myself. There remain 106 species; of these I have examined specimens of 98 from the County. Of the remaining 8 species, 7 are authoritatively recorded in literature and the specimens of some if not all of these are in existence. These are as follows: Sooty Tern, Roseate Tern, Yellow-crowned Night Heron, Gray Kingbird, Bohemian Waxwing, Hudsonian Chickadee, and Blue-gray Gnatcatcher. The records of the 1 remaining species, namely, Cardinal, have been supplied from reliable sources.

The following is a summary of the birds considered in the foregoing pages:—

Extant species and subspecies	319
Introduced species	2
	<u>321</u>
Extirpated species	6
Extinct species	2
	<u>329</u>
Species of doubtful record	16
Species of erroneous record	8
Apocryphal species	1
	<u>25</u>
Total number of species considered	<u>354</u>

¹ Thomas Nuttall: A Manual of the Ornithology of the United States and of Canada, vol. 1, p. 297, 1832.

² T. M. Brewer: Proc. Boston Soc. Nat. Hist., vol. 17, p. 440, 1875.

The species in the following lists have already been considered in their proper places in the Annotated List but are for convenience enumerated here.

EXTINCT SPECIES.

1. Great Auk (pages 60, 85).
2. Labrador Duck (pages 62, 141).

EXTIRPATED SPECIES.

1. Greater Snow Goose (page 147).
2. Trumpeter Swan (page 151).
3. Sandhill Crane (pages 63, 158).
4. Heath Hen (pages 64, 203).
5. Wild Turkey (pages 64, 203).
6. Raven (pages 67, 238).

SPECIES OF DOUBTFUL RECORD.

1. Black-throated Loon (page 81).
2. Murre (page 84).
3. Skua (page 86).
4. Ivory Gull (page 88).
5. Fulmar (page 107).
6. Manx Shearwater (page 108).
7. Brown Pelican (page 117).
8. Greenland Eider (page 141).

9. American White-fronted Goose (page 148).

10. Hutchins's Goose (page 149).
11. Barnacle Goose (page 150).
12. Wood Ibis (page 151).
13. Snowy Heron (page 155).
14. Clapper Rail (page 159).
15. Black Rail (page 160).
16. Purple Grackle (page 247).

SPECIES OF ERRONEOUS RECORD.

1. Crested Grebe (page 79).
2. Black-tailed Shearwater (page 109).
3. Booby (page 112).
4. Gyrfalcon (page 212).
5. McCown's Longspur (page 257).
6. Baird's Sparrow (page 264).
7. Cerulean Warbler (page 293).
8. Kentucky Warbler (page 297).

ADDENDA.

By an oversight the name of one of the principal contributors both of observations and of rare specimens was omitted from the list given on page 74, namely, that of my brother, Mr. W. S. Townsend.

Additional Note on the Black Duck.

The following notes continue the observations on the relative numbers of the two forms of Black Duck sent to Faneuil Hall Market from Essex County during the present winter, 1904-5 (see page 127.)

Date.	<i>A. o. obscura.</i>	<i>A. o. rubripes.</i>
January 23	0	6
January 28	2	4
January 30	2	0
February 1	2	6
February 2	0	2
February 8	6	5
February 10	0	4
February 11	5	3
February 18	6	3
February 23	0	2
February 27	2	5
	<hr/> 25	<hr/> 40

Additional Note on the Pintail.

Through an oversight a record for the Pintail in February was omitted from its proper place in the text. A male bird was shot from a flock of twelve Pintails on the Lynn Marshes, February 21st, 1889.¹

Additional Note on the Greater Scaup.

An adult male of this species was taken at Ipswich on February 14th, 1905.

¹A. M. Tufts: Ornithologist and Oologist, vol. 14, p. 47, 1889.

BIBLIOGRAPHY.

- ALLEN, F. H. The Blue-gray Gnatcatcher in Massachusetts. *Auk*, vol. 20, p. 69, 1903.
- ALLEN, F. H. The Observer. Nature near Boston. Boston Evening Transcript, April 27, July 27, August 24, September 7, October 19 and 26, 1904.
Contains accounts of trips to Ipswich, Plum Island, and Nahant.
- ALLEN, F. H. A Sanderling with Hind Toes. *Auk*, vol. 21, p. 79, 1904.
- ALLEN, G. M. The Lapland Longspur wintering in Massachusetts. *Auk*, vol. 19, pp. 202-203, 1902.
- ALLEN, G. M. A List of the Birds of New Hampshire. *Proc. Manchester Inst. Arts and Sciences*, vol. 4, pp. 23-222, 1903 [= 1904].
Hudsonian Chickadee at Salisbury, Mass.
- ALLEN, J. A. Catalogue of the Birds found at Springfield, Mass., with Notes on their Migration, Habits, &c.; together with a List of those Birds found in the State not yet observed at Springfield. *Proc. Essex Inst.*, vol. 4, pp. 48-98, 1864.
- ALLEN, J. A. Notes on some of the Rarer Birds of Massachusetts. *Amer. Naturalist*, vol. 3, pp. 505-519, 568-585, 631-648, 1869-70.
- ALLEN, J. A. Decrease of Birds in Massachusetts. *Bull. Nuttall Orn. Club*, vol. 1, pp. 53-60, 1876.
- ALLEN, J. A. A List of the Birds of Massachusetts, with Annotations, *Bull. Essex Inst.*, vol. 10, pp. 3-37, 1878.
- ALLEN, J. A. The Lark-Bunting (*Calamospiza bicolor*) in Massachusetts. *Bull. Nuttall Orn. Club*, vol. 3, p. 48, 1878.
- ALLEN, J. A. Destruction of Birds by Light-houses. *Bull. Nuttall Orn. Club*, vol. 5, pp. 131-138, 1880.
- ALLEN, J. A. The Wood Ibis in Massachusetts. *Bull. Nuttall Orn. Club*, vol. 8, p. 187 [=185], 1883.
- ALLEN, J. A. A Revised List of the Birds of Massachusetts. *Bull. Amer. Mus. Nat. Hist.*, vol. 1, pp. 221-271, 1886.
- ANON. Good News from New England: with an exact Relation of the first Planting that Countrey: A Description of the Profits accruing by the Worke. London: 1648.
Reprinted in *Collections Mass. Hist. Soc.*, ser. 4, vol. 1, pp. 195-218, 1852.
- ANON. [Great Gray Owl from North Salem presented to Essex Institute by J. W. Roberts.] *Proc. Essex Inst.*, vol. 4, p. cv, 1865.

- ANON. [Nest and Eggs of Hermit Thrush from Lynn.] Proc. Boston Soc. Nat. Hist., vol. 13, p. 366, 1870.
- AUDUBON, J. J. The Birds of America, from Drawings made in the United States and their Territories. New York and Philadelphia: 7 vols., illus., 1840-44.
- BAIRD, S. F., BREWER, T. M., and RIDGWAY, R. A History of North American Birds. Land Birds. Boston: 3 vols., illus., 1874.
- BAIRD, S. F., BREWER, T. M., and RIDGWAY, R. The Water Birds of North America. 2 vols., illus. Issued in continuation of the Publications of the Geological Survey of California. Memoirs Mus. Comp. Zool. at Harvard College, vols. 12 and 13, 1884.
Also later editions of the five volumes.
- BLAKE, F. G. and M. C. [List of six Species of Birds seen at Nahant Beach, December 26, 1903.] Bird-Lore, vol. 6, p. 9, 1904.
- BLAKE, M. C., and WRIGHT, H. W. [List of Birds seen December 24, 1904, at Nahant.] Bird-Lore, vol. 7, p. 24, 1905.
- BOLLES, FRANK. Land of the Lingering Snow. Chronicles of a Stroller in New England from January to June. Boston and New York: [4] + 234 pp., 1891.
"The Equinoctial on the Dunes," pp. 59-72.
- BOURNE, P. G. [Nests of Broad-winged, Red-shouldered, and Cooper's Hawks, and Barn Owl at Haverhill.] Nidologist, vol. 1, p. 166, 1894.
- BREWER, T. M. Some Additions to the Catalogue of the Birds of Massachusetts in Prof. Hitchcock's Report, &c. Boston Journ. Nat. Hist., vol. 1, pp. 435-439, 1837.
- BREWER, T. M. [Nashville Warbler and other Birds nesting near Lynn.] Proc. Boston Soc. Nat. Hist., vol. 6, pp. 4-6, 1856.
- BREWER, T. M. Catalogue of the Birds of New England, with brief Notes indicating the Manner and Character of their Presence; with a List of Species included in Previous Catalogues believed to have been wrongly classed as Birds of New England. Proc. Boston Soc. Nat. Hist., vol. 17, pp. 436-454, 1875.
- BREWER, T. M. A Defence of his Catalogue of the Birds of New England. Bull. Nuttall Orn. Club, vol. 2, pp. 44-48, 1877.
Blue Goose from Gloucester reported as *Anser gambeli*, p. 46.
- BREWER, T. M. A New Bird to Massachusetts. Bull. Nuttall Orn. Club, vol. 2, p. 78, 1877.
Chestnut-collared Longspur at Magnolia.
- BREWER, T. M. Notes on the Occurrence of *Micropalama himantopus* in New England. Proc. Boston Soc. Nat. Hist., vol. 19, pp. 252-256, 1878.
- BREWER, T. M. [Lapland Longspur at Swampscott, May 1, 1877.] Proc. Boston Soc. Nat. Hist., vol. 19, p. 257, 1878.

- BREWER, T. M. Notes on certain Species of New England Birds, with Additions to his Catalogue of the Birds of New England. Proc. Boston Soc. Nat. Hist., vol. 19, pp. 301-309, 1878.
American Pipit in January at Newburyport, p. 302.
- BREWER, T. M. Rare Visitors. Forest and Stream, vol. 10, p. 95, 1878.
Louisiana Tanagers at Lynn.
- BREWER, T. M. The Seaside Finch (*Ammodramus maritimus*) in Eastern Massachusetts. Bull. Nuttall Orn. Club, vol. 3, p. 48, 1878.
- B[BREWER], T. M. Allen's Birds of Massachusetts. Bull. Nuttall Orn. Club, vol. 3, pp. 138-140, 1878.
Review. Canada Warbler nesting in Essex County, p. 139; Baird's Sandpiper at Swampscott, p. 140.
- BREWER, T. M. The Carolina Wren in Massachusetts. Bull. Nuttall Orn. Club, vol. 3, p. 193, 1878.
- BREWER, T. M. Wilson's Thrush, with Spotted Eggs and nesting on a Tree. Bull. Nuttall Orn. Club, vol. 3, p. 193, 1878.
- BREWER, T. M. The Titlark (*Anthus ludovicianus*) in Massachusetts in June. Bull. Nuttall Orn. Club, vol. 3, p. 194, 1878.
- BREWER, T. M. The American Brown Creeper. Bull. Nuttall Orn. Club, vol. 4, pp. 87-90, 1879.
Nesting at Lynn.
- BREWSTER, WILLIAM. Birds New to Massachusetts Fauna. Amer. Naturalist, vol. 6, pp. 306-307, 1872.
- BREWSTER, WILLIAM. Occurrence of a Second Specimen of Swainson's Buzzard (*Buteo swainsoni*) in Massachusetts. Bull. Nuttall Orn. Club, vol. 3, pp. 39-40, 1878.
- BREWSTER, WILLIAM. The Terns of the New England Coast. Bull. Nuttall Orn. Club, vol. 4, pp. 13-22, 1879.
Caspian Tern at Ipswich, p. 14.
- BREWSTER, WILLIAM. Additional Notes on the Whistling Swan (*Cygnus americanus*) in New England. Bull. Nuttall Orn. Club, vol. 4, pp. 125-126, 1879.
- BREWSTER, WILLIAM. Notes on the Habits of the Kittiwake Gull. Bull. Nuttall Orn. Club, vol. 7, pp. 125-126, 1882.
- BREWSTER, WILLIAM. Probable Breeding of the Winter Wren (*Anorthura troglodytes hiemalis*) in Eastern Massachusetts. Bull. Nuttall Orn. Club, vol. 8, pp. 119-120, 1883.
- BREWSTER, WILLIAM. An Unusual Influx of the Three-toed Woodpeckers (*Picoides arcticus* and *P. americanus*) into Eastern Massachusetts. Bull. Nuttall Orn. Club, vol. 8, p. 122, 1883.

- BREWSTER, WILLIAM. Notes on the Birds observed during a Summer Cruise in the Gulf of St. Lawrence. Proc. Boston Soc. Nat. Hist., vol. 22, pp. 364-412, 1884.
- BREWSTER, WILLIAM. The Golden Eagle in Eastern Massachusetts. Auk, vol. 4, p. 75, 1887.
- BREWSTER, WILLIAM. Recent Occurrence of the Turkey Vulture in Eastern Massachusetts. Auk, vol. 7, pp. 204-205, 1890.
- BREWSTER, WILLIAM. Some Additional Eastern Records of Swainson's Hawk (*Buteo swainsoni*). Auk, vol. 10, pp. 82-83, 1893.
- BREWSTER, WILLIAM. A Remarkable Fight of Pine Grosbeaks (*Pinicola enucleator*). Auk, vol. 12, pp. 245-256, 1895.
- BREWSTER, WILLIAM. The Lesser Snow Goose in New England. Auk, vol. 14, p. 207, 1897.
- BREWSTER, WILLIAM. An Undescribed Form of the Black Duck (*Anas obscura*). Auk, vol. 19, pp. 183-188, 1902.
- BREWSTER, WILLIAM, editor. The Land-birds and Game-birds of New England with Descriptions of the Birds, their Nests and Eggs, their Habits and Notes. By H. D. Minot. Boston and New York: 2d edition, xxiv + 492 pp., illus., 1895. Also 3d edition, with few changes, Boston, 1903.
- BROWN, C. E. The Evening Grosbeak at Beverly, Mass. Auk, vol. 21, p. 385, 1904.
- CABOT, SAMUEL. [Pair of Canvasback Ducks from Newburyport, Mass.] Proc. Boston Soc. Nat. Hist., vol. 2, p. 89, 1846.
- CABOT, SAMUEL. [Roseate, Common, and Arctic Terns breeding at Beverly.] Proc. Boston Soc. Nat. Hist., vol. 2, p. 179, 1846.
- CHADBOURNE, A. P. The Rarer Birds of Massachusetts. Quarterly Journ. Boston Zool. Soc., vol. 1, pp. 4-5, 20-24, 30-35, 1882.
- CHADBOURNE, A. P. An Unusual Flight of Killdeer Plover (*Ægialitis vocifera*) along the New England Coast. Auk, vol. 6, pp. 255-263, 1889.
- COLLINS, J. W. Notes on the Habits and Methods of Capture of various Species of Sea Birds that occur on the Fishing Banks off the Eastern Coast of North America, and which are used as Bait for catching Codfish by New England Fishermen. U. S. Comm. of Fish and Fisheries, Report of the Commissioner for 1882, pp. 311-338, pl. 1, 1884.
- COLLINS, J. W. Notes on certain Laridæ and Procellariidæ of the New England Coast. Auk, vol. 1, pp. 236-238, 1884.
- COUES, ELLIOTT. Occurrence of the Swallow-tailed Kite in Massachusetts. Bull. Nuttall Orn. Club, vol. 8, p. 61, 1883.
- DEANE, RUTHVEN. Occurrence of the Burrowing Owl in Massachusetts. Rod and Gun, vol. 6, p. 97, 1875.

- DEANE, RUTHVEN. Unusual Abundance of the Snowy Owl (*Nyctea scandiaca*) in New England. Bull. Nuttall Orn. Club, vol. 2, pp. 9-11, 1877.
- DEANE, RUTHVEN. Occurrence of the Sooty Tern in Massachusetts. Bull. Nuttall Orn. Club, vol. 2, p. 27, 1877.
- DEANE, RUTHVEN. Additional Captures of the Curlew Sandpiper in New England. Bull. Nuttall Orn. Club, vol. 4, p. 124, 1879.
- DEANE, RUTHVEN. The Blue-gray Gnatcatcher in Massachusetts. Bull. Nuttall Orn. Club, vol. 5, p. 47, 1880.
At Magnolia.
- DEANE, RUTHVEN. Unusual Abundance of the Snowy Owl (*Nyctea nyctea*) in New England and Canada. Auk, vol. 19, pp. 271-283, 1902.
- DUTCHER, WILLIAM. The Labrador Duck:—a Revised List of the Extant Specimens in North America, with some Historical Notes. Auk, vol. 8, pp. 201-216, 1891.
- DUTCHER, WILLIAM. The Labrador Duck—Another Specimen, with Additional Data respecting Extant Specimens. Auk, vol. 11, pp. 4-12, 1894.
At Swampscott, 1862, p. 8.
- DWIGHT, JONATHAN. The Ipswich Sparrow (*Ammodramus princeps* Maynard) and its Summer Home. Memoirs Nuttall Orn. Club, no. 2, 56 pp., 1 pl. Cambridge: 1895.
- EMMONS, EBENEZER. A Catalogue of the Animals and Plants in Massachusetts. II. Birds. In Edward Hitchcock's Report on the Geology, Mineralogy, Botany, and Zoology of Massachusetts. Amherst: pp. 545-551, 1833.
- EMMONS, EBENEZER. A Catalogue of the Animals and Plants in Massachusetts. II.—Birds. In Edward Hitchcock's Report on the Geology, Mineralogy, Botany, and Zoology of Massachusetts, 2d edition, corrected and enlarged. Amherst: pp. 528-534, 1835.
- FARLEY, J. A. The Purple Gallinule in Massachusetts in the Breeding Season. Auk, vol. 18, p. 190, 1901.
- FARLEY, J. A. The Alder Flycatcher (*Empidonax traillii alnorum*) as a Summer Resident of Eastern Massachusetts. Auk, vol. 18, pp. 347-355, 1901.
- FARLEY, J. A. Massachusetts Bird Notes. Auk, vol. 18, pp. 398-400, 1901.
Purple Gallinule at Newbury, Blackburnian Warbler at Lynnfield, Flicker's nest in a barn.
- FAXON, WALTER. The Long-billed Marsh Wren, Maryland Yellow-throat, Nashville Warbler and Great Blue Heron in Eastern Massachusetts in Winter. Auk, vol. 7, pp. 408-410, 1890.
- FELT, J. B. History of Ipswich, Essex, and Hamilton. Cambridge: xvi+304 pp., 1834.

- FORBUSH, E. H. The Destruction of Birds by the Elements in 1903-04. Fifty-first Ann. Report Mass. State Board Agric., pp. 457-503, 1 pl., 1904.
- FOWLER, S. P. Changes produced by Civilization in the Habits of our Common Birds. Proc. Essex Inst., vol. 3, pp. 31-36, 1860.
- GRAY, A. F. Resident Birds of Danvers, Mass. Forest and Stream, vol. 6, pp. 181, 1876.
- HIGGINSON (or HIGGESON), FRANCIS. New England's Plantation, or, a short and true Description of the Commodities and Discommodities of that Country. London: 1630.
Reprinted in Collections Mass. Hist. Soc. for the year 1792, vol. 1, pp. 117-124.
- HOFFMANN, RALPH. A Guide to the Birds of New England and Eastern New York, containing a Key for each Season and short Descriptions of over two hundred and fifty Species with particular Reference to their Appearance in the Field. Boston and New York: xiii + 357 pp., illus., 1904.
- HOLDER, J. B. Catalogue of Birds noticed in the Vicinity of Lynn, during the Years of 1844-'5-'6. Publications of the Lynn Nat. Hist. Soc., no. 1, 8 pp., 1846.
- HOWE, R. H., JR. Four Winter Records of the Short-eared Owl on the Massachusetts Coast. Auk, vol. 13, p. 257, 1896.
- HOWE, R. H., JR. On the Birds' Highway. Boston: xv + 175 pp., illus., 1899.
Chapter 3, "On the Sands of Ipswich," pp. 20-26.
- HOWE, R. H., JR. *Otocoris alpestris praticola* at Ipswich, Mass. Auk, vol. 17, p. 175, 1900.
- HOWE, R. H., JR. Various Massachusetts Notes of Interest. Auk, vol. 19, pp. 91-92, 1902.
Caspian Tern at Ipswich.
- HOWE, R. H., JR. The Savana [*sic*] Sparrow wintering in Massachusetts. Auk, vol. 19, p. 203, 1902.
- HOWE, R. H., JR., and ALLEN, G. M. The Birds of Massachusetts. Cambridge: 154 pp., 1901.
- HUBBARD, WILLIAM. The History of New England from the Year 1620 to the Year 1680.
Reprinted in Collections Mass. Hist. Soc., ser. 2, vol. 5, vi + [14] + xvii + 766 pp., 1878.
- HURD, D. H. History of Essex County, Massachusetts, with Biographical Sketches of Many of its Pioneers and Prominent Men. Philadelphia: 2 vols., illus., 1888.
- JEFFRIES, J. A. The Yellow-rumped Warbler (*Dendroica coronata*) wintering in Swampscott, Mass. Bull. Nuttall Orn. Club, vol. 4, p. 118, 1879.
- JEFFRIES, W. A. *Ægiothus exilipes* in Massachusetts. Bull. Nuttall Orn. Club, vol. 4, p. 121, 1879.

- JEFFRIES, W. A. *Chen caerulescens* in Massachusetts. Auk, vol. 6, p. 68, 1889.
- JEFFRIES, W. A. Phalaropes at Swampscott, Massachusetts. Auk, vol. 8, pp. 112-113, 1891.
- JOB, H. K. Among the Water-fowl. Observation, Adventure, Photography. A popular narrative Account of the Water-fowl as found in the Northern and Middle States and Lower Canada, east of the Rocky Mountains. New York: xxi + 224 pp., illus., 1903.
- JOSSELYN, JOHN. New England's Rarities discovered: in Birds, Beasts, Fishes, Serpents, and Plants of that Country. London: [4] + 114 pp., 1672.
Reprint: Boston, 1865.
- JOSSELYN, JOHN. An Account of two Voyages to New England [during 1638, 1663]. London: [6] + 279 pp., 1675.
Reprinted in Collections Mass. Hist. Soc., ser. 3, vol. 3, pp. 211-354, 1833.
- KENNARD, F. H. The Avocet (*Recurvirostra americana*) at Ipswich, Mass. Auk, vol. 14, p. 212, 1897.
- KING, H. W. [List of 14 Species of Birds seen December 28, 1903, at Nahant.] Bird-Lore, vol. 6, p. 8, 1904.
- LAMB, C. R. Baird's Sandpiper at Marblehead, Mass. Quarterly Journ. Boston Zool. Soc., vol. 1, p. 37, 1882.
- LEONARD, H. C. Pigeon Cove and Vicinity. Boston: viii + 193 pp., 1873.
- LEWIS, ALONZO. The History of Lynn. Boston: 260 pp., illus., 1829.
- MACKAY, G. H. Habits of the Oldsquaw (*Clangula hyemalis*) in New England. Auk, vol. 9, pp. 330-337, 1892.
- MACKAY, G. H. Woodcock Notes. Auk, vol. 20, p. 210, 1903.
In December at Lynn.
- MAYNARD, C. J. The Naturalist's Guide in collecting and preserving Objects of Natural History, with a complete Catalogue of the Birds of Eastern Massachusetts. Boston: ix + 170 pp., illus., 1870.
Other later editions.
- MAYNARD, C. J. A New Species of Passerculus from Eastern Massachusetts. Amer. Naturalist, vol. 6, pp. 637-638, 1872.
Passerculus princeps.
- MAYNARD, C. J. The Birds of Florida with the Water and Game Birds of Eastern North America. Boston, Newtonville: in parts, illus., 1878.
- MAYNARD, C. J. The Birds of Eastern North America; with Original Descriptions of all the Species which occur east of the Mississippi River, between the Arctic Circle and the Gulf of Mexico, with full Notes upon their Habits, etc. Newtonville: iv + 532 pp., illus., 1881.
Also an 1889 edition.

- MAYNARD, C. J. Handbook of the Sparrows, Finches, etc., of New England. Newtonville: vii + 94 pp., illus., 1896.
- MINOT, H. D. The Land-birds and Game-birds of New England with Descriptions of the Birds, their Nests and Eggs, their Habits and Notes. Boston: xvi + 456 pp., illus., 1877.
- MORRELL, WILLIAM. [Poem on New England, in Latin with English Translation.] Published about 1625.
Reprinted in Collections Mass. Hist. Soc. for the year 1792, vol. 1, pp. 125-139.
- MORTON, THOMAS. New English Canaan or New Canaan. Amsterdam: 1637.
Reprinted by Prince Society, Boston, 1863.
- MURDOCH, JOHN. Effects of the Warm Winter on the Migration of Birds. Bull. Nuttall Orn. Club, vol. 3, pp. 75-76, 1878.
- [NEWCOMB, R. L. =] "TEAL." The Massachusetts Coast. Forest and Stream, vol. 6, pp. 417-418, 1876.
Notes on birds at Salem.
- NEWCOMB, R. L. Field Notes. The Country, vol. 1, p. 354, 1878.
- [NEWCOMB, R. L. =] "TEAL." Extracts from a Naturalist's Note-book. Forest and Stream, vol. 10, p. 155, 1878.
- NEWCOMB, R. L. Notes on Shore Birds. Forest and Stream, vol. 22, pp. 483-484, 1884.
- NUTTALL, THOMAS. A Manual of the Ornithology of the United States and of Canada. The Land Birds. Cambridge: viii + 683 pp., illus., 1832.
- NUTTALL, THOMAS. A Manual of the Ornithology of the United States and of Canada. The Water Birds. Boston: vii + 627 pp., illus., 1834.
- OSGOOD, FLETCHER. Shore Bird Shooting on the New England Coast.—VI. Shooting and Fishing, vol. 9, p. 12, October 30, 1890.
- PEABODY, W. B. O. A Report on the Ornithology of Massachusetts. In Reports on the Fishes, Reptiles and Birds of Massachusetts. Published agreeably to an Order of the Legislature, by the Commissioners on the Zoological and Botanical Survey of the State. Boston: pp. 255-404, 1839.
Also published in Boston Journ. Nat. Hist., vol. 3, nos. 1 and 2, pp. 65-266, 1840, with title: A Report on the Birds of Massachusetts made to the Legislature in the Session of 1838-9.
- PHILLIPS, J. C. The Ring-neck Pheasant as a Future Game Bird for Massachusetts. Forest and Stream, vol. 60, p. 10, 1903.
- PURDIE, H. A. Notice of a few Birds of Rare or Accidental Occurrence in New England. Bull. Nuttall Orn. Club, vol. 2, pp. 20-22, 1877.
King Rail from Nahant, p. 22.

- PURDIE, H. A. MacFarlane's Gyrfalcon (*Falco gyrfalco sacer*) in Maine. Bull. Nuttall Orn. Club, vol. 4, pp. 188-189, 1879.
Mentions Black Gyrfalcon from Essex County.
- PUTNAM, F. W. Catalogue of the Birds of Essex County, Massachusetts. Proc. Essex Inst., vol. 1, pp. 201-231, 1856.
- P[UTNAM], F. W. [Humerus of a Great Auk in Ipswich Shellheaps.] Proc. Essex Inst., vol. 5, p. 310, footnote, 1868.
- ROBBINS, R. C. The Arctic Three-toed Woodpecker in Beverly, Mass. Auk, vol. 17, p. 173, 1900.
- ROBINSON, JOHN. Opening of a newly discovered Shellheap at Ipswich. Bull. Essex Inst., vol. 14, pp. 158-161, 1882.
Turkey bones found, p. 161.
- SAMUELS, E. A. Ornithology of Massachusetts — List of Species. Eleventh Annual Report of the Secretary Mass. Board of Agriculture, . . . for 1863, Appendix, pp. xviii-xxix, Boston, 1864.
Also separate, entitled: A Descriptive Catalogue of the Birds of Massachusetts, 15 pp.
- SAMUELS, E. A. Ornithology and Oology of New England: containing full Descriptions of the Birds of New England, and adjoining States and Provinces, arranged by a long-approved Classification and Nomenclature; together with a complete History of their Habits, Times of Arrival and Departure, their Distribution, Food, Song, Time of Breeding, and a careful and accurate Description of their Nests and Eggs; with Illustrations of many Species of the Birds, and accurate Figures of their Eggs. Boston: vii + 583 pp., illus., 1867.
- SMITH, EVERETT. Tengmalm's Owl. Forest and Stream, vol. 20, p. 285, 1883.
- STEARNS, W. A., and COUES, ELLIOTT. New England Bird Life, being a Manual of New England Ornithology. Part I.—Oscines. Boston: 324 pp., illus., 1881.
- STEARNS, W. A., and COUES, ELLIOTT. New England Bird Life, being a Manual of New England Ornithology. Part II. Non-Oscine Passeres, Birds of Prey, Game and Water Birds. Boston: 409 pp., illus., 1883.
Also later editions of the two volumes.
- TORREY, BRADFORD. The Killdeer Plover (*Ægialitis vocifera*) wintering on the New England Coast. Auk, vol. 6, pp. 274-275, 1889.
- TORREY, BRADFORD. The Clerk of the Woods. Boston and New York: viii + 280 pp., 1903.
"With the Waders," pp. 91-103; "On the North Shore Again," pp. 104-106.
- TOWNSEND, C. W. *Chondestes grammica* and *Vireo philadelphicus* in Massachusetts. Bull. Nuttall Orn. Club, vol. 5, p. 53, 1880.
- TOWNSEND, C. W. The Occurrence of the Lapland Longspur (*Calcarius lapponicus*) in Midwinter in Massachusetts. Auk, vol. 19, p. 202, 1902.

- TOWNSEND, C. W. Extension of the Breeding Range of the Prairie Horned Lark (*Otocoris alpestris praticola*) to the Eastern Coast. Auk, vol. 21, p. 81, 1904.
- TUFTS, A. M. [Flock of Pintails at Lynn, February 21, 1889.] Ornithologist and Oologist, vol. 14, p. 47, 1889.
- VICKARY, N. [Golden-crowned Kinglet nesting at Lynn.] Ornithologist and Oologist, vol. 14, p. 95, 1889.
- VICKARY, N. [Labrador Gyrfalcon at Ipswich; Loggerhead Shrike and Mockingbird.] Ornithologist and Oologist, vol. 18, p. 51, 1893.
- [WEBSTER, F. B.] Rare Birds. Ornithologist and Oologist, vol. 6, p. 64, 1881.
Yellow Rail at Topsfield.
- W[EBSTER], F. B. [Hawk Owl at Lynn.] Ornithologist and Oologist, vol. 10, p. 32, 1885.
- [WEBSTER, F. B.] [Pomarine Jaeger on Merrimac River.] Ornithologist and Oologist, vol. 14, p. 176, 1889.
- WELCH, G. O. [Richardson's Owl at Peabody.] Ornithologist and Oologist, vol. 14, p. 30, 1889.
- WELCH, G. O. [Kingfisher near Salem, January 31, 1889.] Ornithologist and Oologist, vol. 14, p. 30, 1889.
- WHITE, H. G. Occurrence of the Turkey Buzzard in Massachusetts. Ornithologist and Oologist, vol. 11, p. 157, 1886.
- WHITMAN, G. P. The Purple Gallinule. Amer. Naturalist, vol. 9, p. 573, 1875.
At Rockport.
- WOOD, WILLIAM. New Englands Prospect. A true, lively, and experimentall Description of that Part of America commonly called New England: discovering the State of that Countrie, both as it stands to our New-come English Planters; and to the old Native Inhabitants. London: [8] + 98 + [5] pp., map, 1634.
Reprinted by Prince Society, Boston, 1865.
- WRIGHT, H. W. Hudsonian Chickadee about Boston, Mass. Auk, vol. 22, p. 87, 1905.
At Castle Hill, Ipswich.
- WYMAN, JEFFRIES. An Account of some Kjækkenmøddings, or Shell-heaps, in Maine and Massachusetts. Amer. Naturalist, vol. 1, pp. 561-584, pls. 14-15, 1868.

ERRATA.

- p. 65, line 2 from bottom, for "Proc." read Bull.
- p. 68, line 3 from bottom, after "Fowl" instead of period, read colon.
- p. 156, line 1 from top, for "**virsecens**" read **virescens**.
- p. 160, line 5 from bottom, for "**Pozana**" read **Porzana**.

INDEX.

(The numbers in heavy-faced type refer to the particular accounts of the species in the Annotated List.)

- ABIETICOLA**, *Ceophlaeus pileatus*, 225.
Acadian Flycatcher, 231.
 Owl, 219.
 Sharp-tailed Sparrow, 40, 266, 267.
acadica, *Cryptoglaux*, 219.
acanthias, *Squalus*, 20.
Acanthis hornemannii *exilipes*, 251.
 linaria, 251, 252.
 linaria holboëllii, 251.
 linaria rostrata, 251.
acaule, *Cypripedium*, 32.
Accipiter atricapillus, 208.
 cooperii, 207.
 velox, 207.
accipitrinus, *Asio*, 216.
Acer pennsylvanicum, 9, 10.
 rubrum, 9, 32.
 saccharinum, 9.
 saccharum, 9.
 spicatum, 10.
Acorus calamus, 43.
Actitis macularia, 188.
Actodromas bairdii, 173.
 fuscicollis, 172.
 maculata, 171.
 minutilla, 174.
aculeata, *Ophiopholis*, 18.
acuta, *Dafila*, 133.
ædon, *Troglodytes*, 304.
Ægialitis meloda, 197, 198, 199.
 meloda circumcincta, 198.
 semipalmata, 196.
 wilsonia, 199.
æglefinus, *Melanogrammus*, 20.
æneus, *Quiscalus quiscula*, 247.
æstiva, *Dendroica*, 290.
affinis, *Aythya*, 136.
Agelaius phœniceus, 245.
agilis, *Geothlypis*, 297.
 Orchestia, 19.
Aix sponsa, 133.
alba, *Carya*, 9.
 Pagophila, 88.
 Quercus, 9.
albeola, *Charitonetta*, 139.
albicollis, *Zonotrichia*, 269.
Alca torda, 84.
Alcidæ, 78, 82, 83, 86, 137.
alcyon, *Ceryle*, 222.
Alder, 32, 232, 265.
 Flycatcher, 10, 231.
aliciæ, *Hylocichla*, 312.
Alle alle, 85.
alle, *Alle*, 85.
 alleni, *Lagopus lagopus*, 203.
 alnifolium, *Viburnum*, 10.
 alnorum, *Empidonax traillii*, 231.
 Alnus, 32.
 alpestris, *Otocoris*, 232.
 amara, *Carya*, 9.
 Amelanchier, 32.
 American Avocet, 10, 165.
 Barn Owl, 215.
 Beech, 9.
 Bittern, 151.
 Coot, 38, 45, 49, 130, 162.
 Crossbill, 250.
 Crow, 5, 34, 39, 238.
 Dunlin, 173, 174, 176, 254.
 Egret, 10, 155.
 Eider, 16, 141.
 Elm, 9, 10, 247, 285.
 Golden Plover, 194.
 Golden-eye, 17, 38, 118, 137.
 Goldfinch, 252.
 Goshawk, 208.
 Hawk Owl, 221.
 Merganser, 49, 52, 117, 120.
 Osprey, 212, 214.
 Pipit, 34, 41, 302.
 Redstart, 301.
 Robin, 313.
 Rough-legged Hawk, 210.
 Scoter, 27, 52, 126, 142, 145, 146.
 Sea-rocket, 33.
 Sparrow Hawk, 213.
 Three-toed Woodpecker, 224.
 White Pelican, 117.
 White-fronted Goose, 148.
 Widgeon, 49, 50, 52, 130.
 Woodcock, 166.
 americana, *Aythya*, 134.
 Cakile, 33.
 Certhia familiaris, 307.
 Clangula clangula, 137.
 Fraxinus, 9.
 Fulica, 162.
 Larix, 9.
 Mareca, 130.
 Oidemia, 142.
 Recurvirostra, 165.
 Spiza, 275.
 Ulmus, 9, 10, 32.
 americanum, *Erythronium*, 43.
 americanus, *Coccyzus*, 222.
 Homarus, 13.
 Merganser, 117.
 Picoides, 224.

- Ammodramus caudacutus*, 266.
 henslowii, 265.
 maritimus, 267.
 nelsoni, 267.
 nelsoni subvirgatus, 267.
Ammophila arundinacea, 31, 32.
Ampelis cedrorum, 283.
 garrulus, 283.
Anas boschas, 121.
 obscura, 122, 127, 128, 321.
 obscura rubripes, 125, 126, 321.
anatun, *Falco peregrinus*, 213.
 Angler, 20.
 Annotated List of Birds of Essex County, 74.
Anser albifrons gambeli, 148.
anserina, *Potentilla*, 37.
Anthus pensilvanicus, 302.
antillarum, *Sterna*, 106.
Antrostomus vociferus, 227.
 Ants, 20.
Apocryphal Species, 318.
 Apron, Devil's, 20.
Aquila chrysaetos, 210.
Archibuteo lagopus sancti-johannis, 210.
 Arctic Tern, 16, 23, 34, 103, 104, 105.
 Three-toed Woodpecker, 224.
arctica, *Cyanea*, 18.
 Fratereula, 82.
arcticus, *Gavia*, 81.
 Picoides, 224.
Ardea herodias, 153.
Ardetta exilis, 153.
Arenaria morinella, 200.
arenaria, *Calidris*, 179.
 Mya, 19, 20.
arenicola, [*Otocoris alpestris*], 237.
argentatus, *Larus*, 91.
Arquatella maritima, 170.
articulata, *Polygonella*, 33.
arundinacea, *Ammophila*, 31, 32.
 Phalaris, 43.
 Ash, White, 9.
Asio accipitrinus, 216.
 wilsonianus, 215.
asio, *Megascops*, 219.
 Aspen, 32.
Asterias vulgaris, 18.
Astragalinus tristis, 252.
ater, *Molothrus*, 244.
atricapillus, *Accipiter*, 208.
 Parus, 309.
atricilla, *Larus*, 99.
Atriplex patulum, var. *hastatum*, 33.
 Auk, 120.
 Great, 34, 60, 61, 62, 85.
 Little, 85.
 Razor-billed, 15, 84.
aura, *Cathartes*, 204.
Aurelia flavidula, 18.
auritus, *Colymbus*, 77.
auropallus, *Seiurus*, 296.
Avocet, American, 10, 165.
Aythya affinis, 136.
 americana, 134.
 collaris, 137.
Aythya marila, 135, 136.
 vallisneria, 135.
 BAIRDII, *Actodromas*, 173.
 Coturniculus, 259, 264.
 Baird's Sandpiper, 173.
 Sparrow, 259, 264.
Bakenoptera physalus, 13.
 Bald Eagle, 24, 29, 90, 206, 211.
 Baldpate, 130, 133.
 Balsam Fir, 9.
 Baltimore Oriole, 72, 245, 246, 280.
 Bank Swallow, 24, 29, 34, 40, 281, 282.
 Barberry, 296, 300.
 European, 9.
 Barn Owl, 10, 215.
 Swallow, 24, 29, 40, 279, 281, 283.
 Barnacle Goose, 150.
 Barred Owl, 46, 215, 217.
 Barrow's Golden-eye, 139.
Bartramia longicauda, 186.
 Bartramian Sandpiper, 21, 186.
bassana, *Sula*, 112.
 Basswood, 21.
 Bastard Yellow-leg, 168.
 Bayberry, 32, 33, 206, 227, 240, 241, 242, 280, 291, 292, 309.
 Bay-breasted Warbler, 35, 293.
 Bay-winged Bunting, 257.
 Beach Flea, 19, 178.
 Fly, 20, 229.
 Plover, 179.
 Plum, 32.
 Beach-bird, 22, 179.
 Beach-grass, 31, 32, 34, 250, 253, 256, 260, 262, 265.
 Beech, 43.
 American, 9.
 Beetle, Carrion, 206.
 June, 241.
 Potato, 274.
 Tiger, 20.
 Beetle-head, 192.
 Belted Kingfisher, 120, 222.
 Piping Plover, 198.
Berberis vulgaris, 9.
bernhardus, *Pagurus*, 18.
bernicla, *Branta*, 150.
Betula lenta, 9.
 lutea, 9.
 nigra, 9, 32.
 papyrifera, 9, 10.
 populifolia, 9, 32.
 bicknelli, *Hylocichla aliciae*, 312.
 Bicknell's Thrush, 312.
 bicolor, *Iridoprocne*, 279.
 Quercus, 9.
Bidens chrysanthemoides, 48.
 Birch, Canoe, 9, 10, 43.
 Red, 9, 32.
 Sweet, 9.
 White, 9, 32.
 Yellow, 9.
 Bird, Gray, 260.
 Bittern, 24, 38, 41, 44, 47, 48, 56.

- Bittern, American, 151.
 Least, 153.
 Bittern, 67.
 Black and White Creeper, 287.
 Black and White Warbler, 35, 287, 310.
 Black and Yellow Warbler, 292.
 Black Coot, 142.
 Duck, 13, 15, 23, 26, 38, 41, 42, 44, 45,
 46, 48, 49, 50, 52, 53, 121, 122, 127,
 128, 134, 137, 145, 214, 321.
 Duck, Common, 38.
 Guillemot, 15, 83.
 Gyr Falcon, 212.
 Hag, 109.
 Hagdon, 109.
 Locust, 9.
 Oak, 9.
 Rail, 160.
 Scoter, 142.
 Spruce, 9, 10.
 Tern, 16, 23, 106.
 Vulture, 10, 205.
 Black-bellied Plover, 21, 28, 39, 169, 185, 192,
 195, 199, 241.
 Black-billed Cuckoo, 34, 46, 47, 56, 222.
 Blackbird, 56, 69.
 Crow, 247.
 Red-winged, 24, 34, 40, 44, 45, 46, 47,
 73, 241, 242, 245, 306.
 Rusty, 247, 248.
 blackburnia, Dendroica, 294.
 Blackburnian Warbler, 10, 35, 294.
 Black-crowned Night Heron, 156.
 Black-grass, 37, 266.
 Blackhead, 156.
 Black-headed Gull, 99.
 Black-heart, 192.
 Black-necked Stilt, 10, 165.
 Black-poll Warbler, 35, 48, 294.
 Black-tail, 181.
 Black-tailed Shearwater, 109.
 Black-throated Blue Warbler, 35, 290, 293.
 Bunting, 10, 275.
 Diver, 81.
 Green Warbler, 35, 219, 288, 295.
 Blue Goose, 148.
 Iris, 33.
 Jay, 48, 69, 237.
 Joint-grass, 43.
 Peter, 162.
 Plover, 169.
 Bluebill, 17, 135.
 Widgeon, 135.
 Bluebill, Little, 136.
 Bluebird, 48, 56, 72, 280, 314, 317.
 Blue-gray Gnatcatcher, 10, 310, 319.
 Blue-headed Vireo, 10, 286.
 Blue-winged Teal, 52, 56, 57, 125, 131.
 Bobolink, 40, 46, 244, 267.
 Bob-white, 73, 201, 287.
 Bohemian Waxwing, 283, 319.
 Bonaparte's Gull, 16, 23, 38, 87, 89, 98, 100.
 Sandpiper, 39, 172, 174.
 Bonasa umbellus, 202.
 umbellus togata, 202.
 Booby, 112.
 borealis, Buteo, 208.
 Cancer, 18.
 Clintonia, 10.
 Hierochloë, 37.
 Lanius, 283.
 Linnaea, 10.
 Numenius, 191.
 Nuttallornis, 230.
 Somateria mollissima, 141.
 boschas, Anas, 121.
 Botaurus lentiginosus, 151.
 Bottle-nosed Dolphin, 13.
 brachidactyla, Geothlypis trichas, 298.
 brachyrhynchus, Corvus, 238.
 Brant, 16, 23, 56, 57, 150.
 Goose, 62, 63.
 Branta bernicla, 150.
 canadensis, 148.
 canadensis hutchinsii, 149.
 leucopsis, 150.
 Brant-bird, 176.
 Brantz, 67.
 Brittle-star, 18.
 Broad-winged Hawk, 210.
 Bronzed Grackle, 24, 34, 40, 72, 247.
 Brown Creeper, 11, 57, 307.
 Marlin, 181.
 Pelican, 117.
 Thrasher, 56, 57, 304.
 Thrush, 300, 304.
 Brown-back, 167, 171.
 Brünnich's Murre, 15, 84, 85.
 Bubo virginianus, 220.
 buccinator, Olor, 63, 151.
 Buccinum undatum, 19.
 Butt-breasted Sandpiper, 22, 187.
 Bufflehead, 41, 49, 52, 121, 139.
 Duck, 16.
 Bull-head, 192.
 Bull-peep, 172, 173.
 Bulrush, Great, 43.
 Bunting, Bay-winged, 257.
 Black-throated, 10, 275.
 Indigo, 274.
 Lark, 275.
 Snow, 5, 24, 27, 28, 32, 34, 41, 234, 253,
 255, 256, 262, 302.
 Burgomaster, 89.
 Bur-marigold, 48.
 Burnet, 33.
 Burrowing Owl, 221.
 Butcher-bird, 283.
 Buteo borealis, 208.
 lineatus, 208.
 platypterus, 210.
 swainsoni, 209.
 Butorides virescens, 156.
 Butterbill, 142.
 Butternut, 9.
 CÆRULEA, Florida, 155.
 Polioptila, 310.
 cærulescens, Chen, 148.
 Dendroica, 290, 293.

- Cakile americana*, 33.
Calamagrostis canadensis, 43.
Calamospiza melanocorys, 275.
calamus, *Acorus*, 43.
Calcarius lapponicus, 254.
 ornatus, 257.
calendula, *Regulus*, 310.
 Calico-bird, 200.
Calidris arenaria, 179.
Calopogon pulchellus, 33.
Camptolaimus labradorius, 62, 141.
canace, *Canachites canadensis*, 201.
Canachites canadensis canace, 201.
 Canada Goose, 16, 23, 50, 52, 57, 148, 150.
 Jay, 237.
canadense, *Poterium*, 33.
canadensis, *Branta*, 148.
 Calamagrostis, 43.
 Perisoreus, 237.
 Sitta, 308.
 Tsuga, 9, 32.
 Wilsonia, 301.
 Canadian Spruce Grouse, 201.
 Warbler, 11, 35, 301.
 Zone, 10, 11.
 Canary-grass, Reed, 43.
Cancer borealis, 18.
 irroratus, 18, 240.
candidissima, *Egretta*, 155.
 Canoe Birch, 9, 10, 43.
canutus, *Tringa*, 169.
Canvasback, 52, 134, 135, 141.
caparoch, *Surnia ulula*, 221.
 Cape May Warbler, 289.
 Race, 81.
 Racer, 81.
 Capelin, 108.
Capercaillie, 273.
carbo, *Phalacrocorax*, 61, 114.
Carcinus mænas, 18.
 Cardinal, 10, 273, 319.
 Grosbeak, 274.
Cardinalis cardinalis, 273.
cardinalis, *Cardinalis*, 273.
 Carolina Rail, 38, 44, 46, 48, 160.
 Wren, 10, 304.
carolina, *Porzana*, 160.
carolinensis, *Galeoscoptes*, 303.
 Myrica, 32, 240, 280.
 Nettion, 131.
 Pandion haliaëtus, 214.
caroliniana, *Statice limonium*, var., 37.
carolinus, *Euphagus*, 247.
Carpodacus purpureus, 249.
 Carrion Beetle, 206.
Carya alba, 9.
 amara, 9.
 porcina, 9.
caspia, *Sterna*, 101.
 Caspian Tern, 16, 23, 101.
Castanea dentata, 9.
castanea, *Dendroica*, 293.
 Catbird, 45, 46, 47, 48, 185, 303, 304, 313.
Catharista urubu, 205.
Cathartes aura, 204.
 caudacutus, *Ammodramus*, 266.
 Cedar Waxwing, 283.
 Cedar, Red, 9, 32.
 White, 9, 265.
 Cedar-bird, 283.
cedrorum, *Ampelis*, 283.
celata, *Helminthophila*, 288.
Ceophlæus pileatus abieticola, 225.
Cephus grylle, 83.
cerifera, *Myrica*, 291.
Certhia familiaris americana, 307.
cerulea, *Dendroica*, 293.
 Cerulean Warbler, 293.
Ceryle alcyon, 222.
Chaetura pelagica, 228.
Chalinopsilla oculata, 18.
 Chalk-line, 156.
Chamæcyparis sphaeroidea, 9.
Charadrius dominicus, 194.
Charitonetta albeola, 139.
 Chat, Yellow-breasted, 10, 43, 298.
Chauleasmus streperus, 129.
 Chebec, 232.
Chen caerulescens, 148.
 hyperborea, 62, 147.
 hyperborea nivalis, 62, 147.
 Cherry, Rum, 9, 283.
 Wild Black, 9, 283.
 Cherry-bird, 283.
 Chestnut, 9.
 Chestnut-collared Longspur, 257.
 Chestnut-sided Warbler, 35, 293.
 Chewink, 46, 47, 273.
 Chickadee, 28, 33, 73, 219, 227, 254, 309.
 Hudsonian, 309, 319.
 Chicken, 200.
 Plover, 200.
 Chicken, Mother Cary's, 10.
 Chimney Swallow, 228.
 Swift, 228.
 Chinquapin Oak, 9.
 Chipping Sparrow, 268, 270, 272.
Chondestes grammacus, 268.
Chondrus crispus, 20.
Chordeiles virginianus, 228.
chrysætos, *Aquila*, 210.
chrysoptera, *Helminthophila*, 287.
 Chuckle-head, 192.
Cicindela hirticollis, 20.
cinerea, *Juglans*, 9.
cinereus, *Priofinus*, 109.
 Cinque-foil, Three-toothed, 10.
circumcincta, *Egialitis melodia*, 198.
Circus hudsonius, 205.
Cistothorus stellaris, 305.
 Clam, 19, 34, 241.
 Common, 20.
 Giant, 19.
 Sea, 21.
 Clam-worm, 18.
Clangula clangula americana, 137.
 islandica, 139.
 Clapper Rail, 159.
 Cliff Swallow, 29, 40, 277, 281.
Clintonia borealis, 10.

- Clintonia, Yellow, 10.
 Clupea harengus, 13, 20.
 clypeata, Spatula, 132.
 Coccyzus americanus, 222.
 erythrophthalmus, 222.
 Cock, Domestic, 46, 47, 48.
 Cocklebur, 33.
 Cod, 13, 19.
 Calopa frigida, 20.
 Colaptes auratus luteus, 226.
 Colibri, 70.
 Colinus virginianus, 201.
 collaris, Avthya, 137.
 colubris, Trochilus, 228.
 columbarius, Falco, 213.
 columbianus, Olor, 63, 150.
 Colymbus auritus, 77.
 holbaillii, 77.
 Common Black Duck, 38, 49.
 Clam, 20.
 Cormorant, 16, 61, 114, 116.
 Tern, 13, 15, 16, 23, 34, 38, 102, 105, 107, 176, 183.
 Comptosylpys americana usneæ, 289.
 Connecticut Warbler, 297.
 Contopus virens, 231.
 cooperii, Accipiter, 207.
 Cooper's Hawk, 207.
 Coot, 16, 53, 142.
 American, 38, 45, 49, 130, 162.
 Black, 142.
 Gray, 146.
 White-winged, 145.
 Cormorant, 61, 62, 67, 114, 144.
 Common, 16, 61, 114, 116.
 Double-crested, 16, 23, 61, 114, 115.
 coronata, Dendroica, 290.
 Corvus brachyrhynchos, 238.
 corax principalis, 67, 238.
 marinus, 115.
 Cotton-grass, 265.
 Coturniculus bairdii, 259, 264.
 savannarum passerinus, 264.
 Cowberry, 10.
 Cowbird, 244, 318.
 Crab, 240, 241.
 Green, 18.
 Hermit, 18.
 Horseshoe, 19.
 Rock, 18, 241.
 Cranberry, 33, 240, 241, 242, 265.
 Crane, 63, 67, 68, 69, 153.
 Sandhill, 63, 158.
 Creeper, Black and White, 287.
 Brown, 11, 57, 307.
 crepitans, Rallus, 159.
 Crested Flycatcher, 230.
 Grebe, 79.
 crinitus, Myiarchus, 230.
 crispus, Chondrus, 20.
 cristata, Cyanocitta, 237.
 cristatus, Podiceps, 79.
 Crossbill, 34.
 American, 250.
 Red, 250.
 Crossbill, White-winged, 250.
 Crow, 18, 19, 20, 24, 25, 27, 29, 33, 34, 40, 47, 56, 68, 69, 70, 87, 96, 193, 211, 221, 227, 248, 254.
 Blackbird, 247.
 Crow, American, 5, 34, 39, 238.
 Pond, 162.
 Crymophilus fulcarius, 163.
 Cryptoglaux acadica, 219.
 tengmalmi richardsoni, 218.
 Cuckoo, Black-billed, 34, 46, 47, 56, 222.
 European, 222.
 Yellow-billed, 222.
 cucullatus, Lophodytes, 121.
 Culvers, 68.
 cupido, Tympanuchus, 64, 203.
 Curlew, 56, 69, 182.
 Sandpiper, 177.
 Curlew, Eskimo, 22, 190, 191.
 Hlen, 189.
 Hudsonian, 22, 39, 189.
 Jack, 189.
 Long-billed, 189, 190.
 Cyanea arctica, 18.
 cyanea, Cyanospiza, 274.
 Cyanocitta cristata, 237.
 Cyanospiza cyanea, 274.
 Cycas islandica, 19.
 Cypridium acaule, 32.
 DABCHICK, 45, 77, 79.
 Dafila acuta, 133.
 decipiens, Plantago, 37.
 Deep-water Mussel, 19.
 deglandi, Oidemia, 145.
 delawarensis, Larus, 98.
 delicata, Gallinago, 166.
 Delphinapterus leucas, 13.
 Dendroica aestiva, 290.
 blackburnie, 294.
 caerulea, 290, 293.
 castanea, 293.
 cerulea, 293.
 coronata, 290.
 discolor, 296.
 maculosa, 292.
 palmarum, 295.
 palmarum hypochrysea, 296.
 pennsylvanica, 293.
 striata, 294.
 tigrina, 289.
 vigorsii, 295.
 virens, 295.
 dentata, Castanea, 9.
 depressa, Juniperus communis, var., 9.
 Devil-diver, 77.
 Devil's Apron, 20.
 Dickcissel, 275.
 dilophus, Phalacrocorax, 61, 114, 115.
 Dipper, 139.
 directus, Ensis, 19.
 discolor, Dendroica, 296.
 discors, Querquedula, 131.
 Dispar Goose, 157.
 Dive-hopper, 67.

- Diver, 68.
 Black-throated, 81.
 Great Northern, 80.
 Red-throated, 15, 77, 81.
 Dog-fish, 20.
 Dog-tooth Violet, 43.
Dolichonyx oryzivorus, 244.
 Dolphin, Bottle-nosed, 13.
 Domestic Cock, 46, 47, 48.
 Fowl, 315.
 Pigeon, 223.
domesticus, Passer, 316.
dominicensis, Tyrannus, 230.
dominicus, Charadrius, 194.
 Doppers, 68.
 Double-crested Cormorant, 16, 23, 61, 114, 115.
dougalli, Sterna, 105.
 Dough-bird, 191.
 Dove, Mourning, 203, 204.
 Dovekie, 15, 85.
 Dowitcher, 22, 39, 167.
 Long-billed, 168.
 Western, 168.
 Downy Woodpecker, 223, 237.
dresseri, Somateria, 141.
dröbachiensis, Strongylocentrotus, 18.
 Drosera, 33.
Dryobates pubescens medianus, 223.
villosus, 223.
 Duck, 15, 16, 19, 21, 26, 27, 37, 45, 49, 50, 51, 53, 56, 57, 58, 63, 67, 68, 69, 72, 116, 120, 121, 125, 128, 129, 130, 132, 146, 154, 162, 164, 214, 239.
 Duck Hawk, 24, 213.
 Duck, American Golden-eye, 17, 137.
 Black, 13, 15, 23, 26, 38, 41, 42, 44, 45, 46, 48, 49, 50, 52, 53, 121, 122, 127, 128, 134, 137, 145, 214, 321.
 Bufflehead, 16.
 Common Black, 38, 49.
 Dusky, 122.
 Eider, 57.
 Gray, 129, 133.
 Greater Scaup, 16.
 Harlequin, 141.
 Labrador, 62, 141.
 Pied, 62, 141.
 Red-legged Black, 15, 23, 38, 49, 122, 125, 126.
 Ring-necked, 137.
 Ruddy, 49, 52, 145, 146.
 Scaup, 135.
 Sea, 141.
 Spring Black, 122.
 Summer, 133.
 Summer Black, 122.
 Winter Black, 126.
 Wood, 44, 45, 48, 52, 133.
 Dunlin, American, 173, 174, 176, 254.
duplicata, Polinices, 19.
 Dusky Duck, 122.
 Dyer's Weed, 9.
 EAGLE, 67, 68, 69, 156, 242.
 Eagle, Bald, 24, 29, 90, 206, 211.
 Golden, 210, 211.
 Eave Swallow, 24, 73, 277, 283, 317, 318.
Echinarachnius parma, 18.
Ectopistes migratorius, 65, 203.
 Edible Mussel, 19, 171.
edulis, *Mytilus*, 19, 169, 171, 240.
 Eel-grass, 37, 245, 297.
 Egret, American, 10, 155.
Egretta candidissima, 155.
egretta, Herodias, 155.
 Eider, 135.
 Duck, 57.
 Eider, American, 16, 141.
 Greenland, 141.
 King, 142.
Elanoides forficatus, 205.
elegans, Rallus, 158.
 Elm, 32.
 American, 9, 10, 247, 285.
Empidonax flaviventris, 231.
minimus, 231, 232.
traillii alnorum, 231.
virescens, 231.
 English Snipe, 166, 198.
 Sparrow, 19, 72, 73, 223, 248, 277, 282, 316.
Ensis directus, 19.
Epigæa repens, 9.
Equisetum limosum, 43.
Ereunetes, 173.
occidentalis, 179.
pusillus, 177.
Erismatura jamaicensis, 146.
Erolia ferruginea, 177.
erythrocephalus, *Melanerpes*, 225.
erythrogaster, *Hirundo*, 279.
erythronelas, *Piranga*, 276.
Erythronium americanum, 43.
erythrophthalmus, *Coccyzus*, 222.
Pipilo, 273.
erythrorhynchus, *Pelecanus*, 117.
 Escoute, 142.
 Eskimo Curlew, 22, 190, 191.
Euphagns carolinus, 247.
Euphorbia polygonifolia, 33.
 European Barberry, 9.
 Cuckoo, 222.
 House Sparrow, 316.
 Periwinkle, 19.
 Widgeon, 129, 130.
 Evening Grosbeak, 248.
exilipes, *Acanthis hornemannii*, 251.
exilis, *Ardetta*, 153.
Fagus ferruginea, 9.
Falco columbarius, 213.
peregrinus anatum, 213.
rusticolus gyrfalco, 212.
rusticolus obsoletus, 212.
sparverius, 213.
 Faunal Areas, 6.
fedoa, *Limosa*, 181.
ferruginea, *Erolia*, 177.
Fagus, 9.

- Field Mouse, 213, 217.
 Sparrow, 270.
 Filladies, 70.
 Finback Whale, 13.
 Finch, Grass, 257.
 Lark, 268.
 Pine, 252.
 Purple, 246, 249, 293.
 Finger Sponge, 18.
 Fir Balsam, 9.
 Fish Hawk, 24, 214.
 Fishing-frog, 20.
 Flag, Sweet, 43.
flavidula, Aurelia, 18.
flavifrons, Vireo, 286.
flavipes, Totanus, 183.
flaviventris, Empidonax, 231.
 Flea, Beach, 19, 178.
 Sand, 169.
 Flicker, 28, 34, 46, 56, 183, 206, 207.
 Northern, 226.
 Florida *cærulea*, 155.
 Florida Gallinule, 10, 161.
 Fly, Beach, 20, 229.
 Flycatcher, Acadian, 231.
 Alder, 10, 231.
 Crested, 230.
 Least, 46, 47, 231, 232.
 Olive-sided, 10, 230.
 Small Green-crested, 231.
 Small-headed, 318.
 Yellow-bellied, 231.
forficatus, Elanoides, 205.
formosa, Geothlypis, 297.
forsteri, Sterna, 102.
 Fowl, Domestic, 315.
 Fox, 242.
 Sparrow, 257, 270, 271, 272, 317.
 Tracks of, 33.
Fratercula arctica, 82.
Fraxinus americana, 9.
 Fresh Marshes and their Birds, 43.
frigida, *Cœlepa*, 20.
Fucellia fucorum, 20.
fucorum, *Fucellia*, 20.
Fucus vesiculosus, 20.
Fulica, 142.
 americana, 162.
fulcarius, *Crymophilus*, 163.
fuliginosa, Sterna, 106.
fuliginosus, Puffinus, 109.
 Fulmar, 107.
Fulmarus glacialis, 107.
fuscescens, *Hylocichla*, 311.
fuscollis, *Actodromas*, 172.
Gapus morrhua, 13, 20.
 Gadwall, 52, 129, 133.
galbula, *Icterus*, 246.
gale, *Myrica*, 32.
 Gale, Sweet, 32, 33.
galeata, Gallinula, 161.
Galeoscoptes carolinensis, 303.
 Gallinago *delicata*, 166.
 Gallinula *galeata*, 161.
 Gallinule, Florida, 10, 161.
 Purple, 10, 161.
gambeli, *Anser albifrons*, 148.
Gammarus locusta, 19.
 Gannet, 13, 16, 23, 56, 112.
garrulus, *Ampelis*, 283.
Gavia arcticus, 81.
 imber, 80.
 lumme, 81.
 Geaster, 33.
 Geese, 49, 63, 64, 67, 68.
Gelochelidon nilotica, 101.
Genista tinctoria, 9.
georgiana, *Melospiza*, 272.
Geothlypis agilis, 297.
 formosa, 297.
 philadelphia, 298.
 trichas *brachidactyla*, 298.
gerardii, *Juncus*, 37.
Gerardia maritima, 37.
 purpurea, 33.
Gerardia, Purple, 33.
 Seaside, 37.
 Giant Clam, 19.
gilvus, Vireo, 285.
 Gipsy Moth, 73.
glabra, *Rhus*, 240.
glacialis, *Fulmarus*, 107.
glauca, *Magnolia*, 9.
 Glaucous Gull, 89.
glaucus, *Larus*, 89.
 Gnatcatcher, Blue-gray, 310, 319.
 Godwit, Hudsonian, 22, 39, 181.
 Marbled, 181.
 Golden Eagle, 210, 211.
 Plover, 14, 21, 39, 194.
 Robin, 246.
 Golden-crowned Kinglet, 11, 284, 310.
 Golden-eye, 14, 15, 120, 124.
 American, 38, 118, 137.
 Barrow's, 139.
 Golden-rod, Seaside, 33, 37.
 Golden-winged Warbler, 73, 287.
 Woodpecker, 226.
 Goldfinch, 28, 48, 178, 270, 310.
 American, 252.
 Goosander, 38, 117, 119.
 Goose, American White fronted, 148.
 Barnacle, 150.
 Blue, 148.
 Brant, 62, 63.
 Canada, 16, 23, 50, 52, 57, 143, 150.
 Dispar, 157.
 Greater Snow, 147.
 Hutchins's, 149.
 Lesser Canada, 149.
 Lesser Snow, 147.
 Sea, 163.
 Snow, 62.
 Solan, 113.
 Wild, 45, 54, 148.
 Goshawk, American, 208.
 Grackle, Bronzed, 24, 34, 40, 72, 247.
 Purple, 247.
 Rusty, 40, 247.

- gramineus, Poœcetes, 257.
 grammacus, Chondestes, 268.
 Grass Finch, 257.
 Grass, Poverty, 32.
 Grass-bird, 39, 171.
 Hill, 187.
 Grasshopper Sparrow, 264.
 Grasshopper, Tracks of, 33.
 gravis, Puffinus, 107.
 Gray Bird, 260.
 Coot, 146.
 Duck, 129, 133.
 Gull, 91.
 Hag, 107.
 Kingbird, 230, 319.
 Gray-back, 169.
 Gray-cheeked Thrush, 312.
 Great Auk, 34, 60, 61, 62, 85.
 Black-backed Gull, 14, 15, 23, 27, 38,
 90, 96, 97, 98.
 Blue Heron, 23, 38, 45, 63, 153, 158.
 Bulrush, 43.
 Gray Owl, 217.
 Horned Owl, 44, 220.
 Northern Diver, 80.
 Greater Scaup, 16, 49, 52, 134, 135, 136, 321.
 Shearwater, 15, 107, 109.
 Snow Goose, 147.
 Tattler, 182.
 Yellow-legs, 22, 39, 46, 182.
 Grebe, 83, 119, 137, 162.
 Crested, 79.
 Holbad's, 15, 52, 77, 79.
 Horned, 15, 52, 77, 79.
 Pied-billed, 15, 52, 79.
 Green Crab, 18.
 Heron, 23, 38, 45, 156.
 Plover, 194.
 Green-back, 194.
 Greene Plover, 63.
 Greenland Eider, 141.
 Green-winged Teal, 52, 131, 132.
 Gripes, 67.
 griseus, Macrorhamphus, 167, 168.
 Grosbeak, Cardinal, 274.
 Evening, 248.
 Pine, 34, 249.
 Rose-breasted, 45, 47, 72, 274.
 Ground Juniper, 300.
 Grouse, Canadian Spruce, 201.
 Ruffed, 202, 315.
 Grus mexicana, 63, 158.
 grylle, Cephus, 83.
 Guillemot, Black, 15, 83.
 Gull, 13, 14, 15, 16, 18, 19, 20, 21, 22, 25, 26,
 37, 68, 72, 108, 116, 147.
 Black-headed, 99.
 Bonaparte's, 16, 23, 38, 87, 89, 98, 100.
 Glaucous, 89.
 Gray, 91.
 Great Black-backed, 14, 15, 23, 27, 38,
 90, 96, 97, 98.
 Herring, 14, 15, 19, 22, 23, 24, 27, 28,
 29, 38, 49, 88, 89, 90, 91, 99, 113, 241,
 243.
 Gull, Hutchins's, 90.
 Iceland, 90.
 Ivory, 88.
 Kittiwake, 88.
 Laughing, 99.
 Mackerel, 102.
 Ring-billed, 16, 23, 98, 102.
 Skua, 86.
 Western, 22.
 Winter, 88.
 Gull-billed Tern, 101.
 Gulls, 67.
 gyrfalco, Falco rusticolus, 212.
 Gyrfalcon, 212.
 Black, 212.
 HADDOCK, 20.
 hæmastica, Limosa, 181.
 Hag, 107.
 Black, 109.
 Gray, 107.
 Hagdon, 107.
 Black, 109.
 Haglet, 107.
 Hairy Woodpecker, 10, 223.
 Hairy-crown, 121.
 Halberd-leaved Orache, 33.
 Halæetus leucocephalus, 211.
 Harbor Porpoise, 13.
 Seal, 12, 96.
 Hare, Tracks of, 33.
 Harelda hyemalis, 140.
 harengus, Clupea, 13, 20.
 Harlequin Duck, 141.
 hastatum, Atriplex patulum, var., 33.
 Hawk, 24, 56, 66, 67, 68, 72, 86, 156.
 American Rough-legged, 210.
 American Sparrow, 213.
 Broad-winged, 210.
 Cooper's, 207.
 Duck, 24, 213.
 Fish, 24, 214.
 Hen, 208 (bis).
 Marsh, 39, 205, 208.
 Pigeon, 213.
 Sharp-shinned, 104, 207.
 Swainson's, 209.
 Red-shouldered, 44, 46, 72, 208.
 Red-tailed, 208.
 Hawke, 70.
 Hay, Marsh, 37.
 Hearne, 67.
 Heath Hen, 64, 203.
 Heath-hen, 60.
 Hell-diver, 77, 79.
 Helminthophila celata, 288.
 chrysoptera, 287.
 peregrina, 289.
 rubricapilla, 288.
 Helmitherus vermivorus, 287.
 Helodromas solitarius, 184.
 Hemlock, 9, 32, 43.
 Hen Curlew, 189.
 Hawk, 208 (bis).
 Hen, Heath, 64, 203.

- henslowii*, *Ammodramus*, 265.
Henslow's Sparrow, 265, 319.
herbacea, *Salicornia*, 37.
Hermit Crab, 18.
 Thrush, 10, 312.
Herne, 68.
Herodias egretta, 155.
herodias, *Ardea*, 153.
Heron, 21, 38, 41, 116, 151, 190.
 Black-crowned Night, 156.
 Great Blue, 23, 38, 45, 63, 153, 158.
 Green, 23, 38, 45.
 Little Blue, 10, 155.
 Little Green, 156.
 Night, 23, 24, 28, 29, 38, 45, 93, 156, 214.
 Snowy, 155.
 Yellow-crowned Night, 10, 158, 319.
heros, *Polinices*, 19, 240.
Herring, 13, 108, 112, 119.
 Gull, 14, 15, 19, 20, 22, 23, 24, 27, 28, 29, 38, 49, 88, 89, 90, 91, 99, 113, 241, 243.
Hesperiphona vespertina, 248.
Hickory, *Pignut*, 9.
 Shag-bark, 9.
 Swamp, 9.
hiemalis, *Olbiorchilus*, 305.
Hierochloë borealis, 37.
Hill Grass-bird, 187.
Himantopus mexicanus, 165.
himantopus, *Micropalama*, 168.
hirticollis, *Cicindela*, 20.
Hirundo erythrogaster, 279.
hirundo, *Sterna*, 102.
Histrionicus histrionicus, 141.
histrionicus, *Histrionicus*, 141.
Hoary Redpoll, 251.
Hobble-bush, 10.
holbællii, *Acanthis linaria*, 251.
 Colymbus, 77.
Holbæll's Grebe, 15, 52, 77, 79.
 Redpoll, 251.
Homarus americanus, 13.
Hooded Merganser, 38, 52, 121.
Hookers, 63.
Hop Hornbeam, 9.
Hornbeam, *Hop*, 9.
Horned Grebe, 15, 52, 77, 79.
 Lark, 5, 24, 27, 28, 32, 34, 41, 232, 253, 255, 256, 262, 302.
Horseshoe Crab, 18.
Horse-tail, 43.
House Wren, 72, 304, 317.
Hudsonia tomentosa, 32, 33, 206.
Hudsonian Chickadee, 309, 319.
 Curlew, 22, 39, 189.
 Godwit, 22, 39, 181.
hudsonicus, *Numenius*, 189.
 Parus, 309.
hudsonius, *Circus*, 205.
Humbird, 69, 70.
Humilites, 68.
Humilities, 63.
Humility, 166, 185.
Hummingbird, 68, 70.
 Ruby-throated, 56, 228.
hutchinsii, *Branta canadensis*, 149.
 Larus, 90.
Hutchins's Goose, 149.
 Gull, 90.
Hydrochelidon nigra surinamensis, 106.
hyemalis, *Harelda*, 140.
 Junco, 270.
Hylocichla aliciae, 312.
 aliciae bicknelli, 312.
 fuscescens, 311.
 guttata pallasii, 312.
 mustelina, 311.
 ustulata swainsonii, 312.
hyperborea, *Chen*, 62, 147.
Hyperia, 18.
hypochrysea, *Dendroica palmarum*, 296.
hypogaea, *Speotyto cunicularia*, 221.
ICE-BIRD, 84 (*birds*), 85.
Iceland Gull, 90.
Icteria virens, 298.
Icterus galbula, 246.
 spurius, 246.
iliaca, *Passerella*, 272.
illecebrosus, *Ommastrephes*, 13, 19.
imber, *Gavia*, 80.
impennis, *Plautus*, 60, 85.
Indigo Bunting, 274.
Indigo-bird, 274.
Introduced Species, 315.
ionornis martinica, 161.
Ipswich Sparrow, 5, 24, 25, 28, 30, 32, 34, 40, 71, 234, 253, 256, 258, 264.
Iridoprocne bicolor, 279.
Iris versicolor, 33.
Iris, *Blue*, 33.
Irish Moss, 20.
irroratus, *Cancer*, 18, 240.
islandica, *Clangula*, 139.
 Cyclas, 19.
Ivory Gull, 88.
Ivy, *Poison*, 32.
Ixoreus naevius, 314.
JACK Curlew, 189.
 Rabbit, 33, 279.
 Snipe, 166.
Jaeger, 15, 16, 104.
 Long-tailed, 87.
 Parasitic, 86, 87.
 Pomarine, 86.
jamaicensis, *Erismatura*, 146.
 Porzana, 160.
Jay, *Blue*, 48, 69, 237.
 Canada, 237.
Jelly-fish, 18.
Joint-grass, *Blue*, 43.
Joint-weed, 33.
Juglans cinerea, 9.
Junco, 270.
Junco hyemalis, 270.
Juncus gerardi, 37.
June Beetle, 241.

- Juniper, 9, 296.
 Ground, 300.
 Virginian, 291.
Juniperus communis, var. *depressa*, 9.
virginiana, 9, 32.
- KALI, *Salsola*, 33.
Kalmia latifolia, 9.
 Kentucky Warbler, 297.
 Killdeer, 21, 195.
 King Eider, 142.
 Rail, 10, 158, 159.
 Kingbird, 24, 25, 34, 40, 47, 70, 211, 229, 242.
 Gray, 230, 319.
 Kingfisher, 242, 303.
 Belted, 120, 222.
 Kinglet, Golden-crowned, 11, 284, 310.
 Ruby-crowned, 310.
 Kite, Swallow-tailed, 10, 205.
 Kittiwake, 15, 23, 27, 88, 98, 100.
 Gull, 88.
 Knot, 22, 39, 63, 68, 169, 193.
 Pine, 85.
 Knotty, 85.
 Koet, 142.
 Krieker, 172.
- LABRADOR Duck, 62, 141.
labradorius, *Camptolaimus*, 62, 141.
lactuca, *Uva*, 20.
lacustris, *Scirpus*, 43.
 Lady's Slipper, 32.
Lagopus lagopus, 202.
lagopus alleni, 203.
lagopus, *Lagopus*, 202.
Laminaria, 18, 19, 20.
Lanius borealis, 283.
ludovicianus migrans, 284.
 Lapland Longspur, 5, 24, 28, 32, 34, 41, 253, 254, 262.
lapponicus, *Calcarius*, 254.
 Larch, 9, 265, 309.
 Large Barren-ground Sparrow, 259.
Larix americana, 9.
 Lark Bunting, 275.
 Finch, 268.
 Sparrow, 268.
 Lark, Horned, 5, 24, 27, 28, 32, 34, 41, 232, 253, 255, 256, 262, 302.
 Prairie Horned, 233, 234, 235.
 Shore, 232.
Larus argentatus, 91.
atricilla, 99.
delawarensis, 98.
glaucus, 89.
hutchinsii, 90.
leucopterus, 90.
marinus, 90.
philadelphia, 100.
latifolia, *Kalmia*, 9.
Spiraea salicifolia, var., 32, 232.
 Laughing Gull, 99.
 Laurel, Mountain, 9.
 Leach's Petrel, 14, 16, 109, 111.
 Least Bittern, 153.
 Least Flycatcher, 46, 47, 231, 232.
 Sandpiper, 22, 39, 172, 174, 178, 179, 199.
 Tern, 34, 106.
lenta, *Betula*, 9.
lentiginosus, *Botaurus*, 151.
 Lesser Canada Goose, 149.
 Scaup, 49, 52, 135, 136.
 Snow Goose, 147.
 Yellow-legs, 14, 22, 39, 167, 183.
 Lettuce, Sea, 20.
leucas, *Delphinapterus*, 13.
leucocephalus, *Haliaeetus*, 211.
leucophrys, *Zonotrichia*, 269.
leucopsis, *Branta*, 150.
leucoptera, *Loxia*, 250.
leucopterus, *Larus*, 90.
leucorhoa, *Oceanodroma*, 109.
leucura, *Pinicola enucleator*, 249.
 Lighthouse Records, 53.
limicolæ, 21, 22, 25, 229.
Limosa fedoa, 181.
hæmastica, 181.
limosum, *Equisetum*, 43.
Limulus polyphemus, 19.
linaria, *Acanthis*, 251, 252.
lincolni, *Melospiza*, 271.
 Lincoln's Sparrow, 271.
lineatus, *Buteo*, 208.
Melampus, 240, 241.
Linnæa borealis, 10.
Litorina, 169, 241.
littorea, 19.
palliatæ, 19.
rudis, 19, 240.
 Little Auk, 85.
 Blue Heron, 10, 155.
 Bluebill, 136.
 Green Heron, 156.
 Torch, 301.
littorea, *Litorina*, 19.
lobatus, *Phalaropus*, 163.
 Lobster, 13.
loculator, *Tantalus*, 151.
 Locust, Black, 9.
locusta, *Gammarus*, 19.
lomvia, *Uria*, 84.
 Long-billed Curlew, 189, 190.
 Dowitcher, 168.
 Marsh Wren, 43, 44, 45, 46, 47, 48, 178, 272, 305, 306.
longicauda, *Bartramia*, 186.
longicaudus, *Stercorarius*, 87.
longicornis, *Talorchestia*, 19.
longirostris, *Numenius*, 189.
 Longspur, 234.
 Chestnut-collared, 257.
 Lapland, 5, 24, 28, 32, 34, 41, 253, 254, 262.
 McCown's, 257.
 Long-tailed Jaeger, 87.
 Loon, 15, 52, 56, 80, 81, 116.
 Loone, 68.
Lophius piscatorius, 20.
Lophodytes cucullatus, 121.

- Lord-and-Lady, 141.
 Louisiana Tanager, 276.
Loxia curvirostra minor, 250.
 leucoptera, 250.
ludoviciana, Piranga, 276.
 Zamelodia, 274.
ludoviciana, *Thryothorus*, 304.
lumme, *Gavia*, 81.
lunifrons, *Petrochelidon*, 277.
lutea, *Betula*, 9.
luteus, *Colaptes auratus*, 226.

 MACKEREL Gull, 102.
Macreus, 142.
macrocarpon, *Vaccinium*, 240.
Macrorhamphus griseus, 167, 168.
 scolopaceus, 168.
macroura, *Zenaidura*, 204.
macularia, *Actitis*, 188.
maculata, *Actodromas*, 171.
maculosa, *Dendroica*, 292.
mænas, *Carcinus*, 18.
magna, *Sturnella*, 246.
Magnolia glauca, 9.
Magnolia Warbler, 35, 56, 292.
Magnolia, Small, 9.
 Maize-thieves, 69.
 Mallard, 49, 50, 52, 68, 121, 125, 128, 130, 133.
 Manx Shearwater, 108.
 Maple, Mountain, 10.
 Red, 9, 32, 43, 307.
 Silver, 9.
 Striped, 9, 10.
 Sugar, 9.
 Marbled Godwit, 181.
 Marbleheader, 107.
Mareca americana, 130.
 penelope, 129.
marila, *Aythya*, 135, 136.
marina, *Zostera*, 37, 245.
marinus, *Corvus*, 115.
 Larus, 90.
maritima, *Arquatella*, 170.
 Betula, 32.
 Gerardia, 37.
 Puccinellia, 37.
maritimus, *Ammodramus*, 267.
 Marlin, Brown, 181.
 Marling-spike, 87.
 Marsh Hawk, 39, 205, 208.
 Hay, 37.
 Quail, 246.
 Rosemary, 37.
 Tern, 101.
 Wren, 40.
 Martin, 279.
 Purple, 44, 70, 72, 73, 277, 317.
martinica, *Ionornis*, 161.
 Maryland Yellow-throat, 298.
maxima, *Sterna*, 102.
 Mayflower, 9.
mccownii, *Rhynchophanes*, 257.
 McCown's Longspur, 257.
 Meadowlark, 40, 246.
 Western, 247.
 Meadow-sweet, 32, 232.
 Meawes, 67.
 mediannus, *Dryobates pubescens*, 223.
 Megalestris skua, 86.
 Megascops asio, 219.
 Melampus lineatus, 240, 241.
 Melanerpes erythrocephalus, 225.
 melanocorys, *Calamospiza*, 275.
 Melanogrammus æglefinus, 20.
 melanolencus, *Totanus*, 182.
 Meleagris gallopavo silvestris, 64, 203.
 melodia, *Ægialitis*, 197, 198, 199.
 melodia, *Melospiza cinerea*, 271.
 Melospiza cinerea melodia, 271.
 georgiana, 272.
 lincolni, 271.
 Merganser, 121.
 americanus, 117.
 serrator, 118.
 Merganser, American, 49, 52, 117, 120.
 Hooded, 38, 52, 121.
 Red-breasted, 14, 15, 17, 23, 27, 38, 52,
 80, 117, 118, 128, 138, 140, 145.
Merula migratoria, 313.
mexicana, *Grus*, 63, 158.
mexicanus, *Himantopus*, 165.
 Mice, Tracks of, 33.
Micropalama himantopus, 168.
migrans, *Lanius ludovicianus*, 284.
 Migrant Shrike, 284.
migratoria, *Merula*, 313.
migratorius, *Ectopistes*, 65, 203.
Mimus polyglottos, 303.
minimus, *Empidonax*, 231, 232.
minor, *Loxia curvirostra*, 250.
 Philohela, 166.
minus, *Vaccinium vitis-idaea*, var., 10.
minuta, *Muscicapa*, 318.
minutilla, *Actodromas*, 174.
Mniotilta varia, 287.
 Mockingbird, 10, 303.
Modiolus modiolus, 19.
modiolus, *Modiolus*, 19.
Molothrus ater, 244.
monticola, *Spizella*, 269.
morinella, *Arenaria*, 200.
morrhua, *Gadus*, 13, 20.
 Moss, Irish, 20.
 Moth, Gipsy, 73.
 Mother Cary's Chicken, 110.
 Mottled Owl, 217.
 Mountain Laurel, 9.
 Maple, 10.
 Mourning Dove, 203, 204.
 Warbler, 298.
 Mouse, Field, 213, 217.
 Mud-hen, 142, 162.
 Mud-peep, 39, 174.
 Murre, 84 (*bis*).
 Brünnich's, 15, 84, 85.
Muscicapa minuta, 318.
 Muskrats, Tracks of, 33.
 Mussel, 169, 240, 241.
 Deep-water, 19.
 Edible, 10, 171.

- mustelina*, *Hylocichla*, 311.
Mya, 240.
 arenaria, 19, 20.
Myiarchus crinitus, 230.
Myrica carolinensis, 32, 240, 280.
 cerifera, 291.
 gale, 32.
Myrtle, 32, 291.
 Warbler, 28, 290.
Myrtle-wax, 291.
Mytilus edulis, 19, 169, 171, 240.

NÆVIUS, *Ixoreus* 314.
 Nycticorax nycticorax, 156.
Nashville Warbler, 10, 35, 288.
Nassa trivittata, 19.
nebulosa, *Scotiaptex*, 217.
nelsoni, *Ammodramus*, 267.
Nelson's Sharp-tailed Sparrow, 40, 266, 267.
Nereis, 18.
Nettion carolinensis, 131.
Night Heron, 23, 24, 28, 29, 38, 45, 93, 156, 214.
Nighthawk, 44, 47, 228.
nigra, *Betula*, 9, 32.
 Picea, 9, 10.
nilotica, *Gelochelidon*, 101.
Ninmurders, 70.
nivalis, *Chen hyperborea*, 62, 147.
 Passerina, 253.
Noddy, 107.
Northern American Raven, 238.
 Downy Woodpecker, 223.
 Flicker, 226.
 Loggerhead Shrike, 284.
 Parula Warbler, 289.
 Phalarope, 16, 56, 57, 163.
 Pileated Woodpecker, 225.
 Raven, 67.
 Shrike, 283.
 Yellow-throat, 28, 34, 35, 45, 46, 47, 48, 298.
Norway Pine, 9.
noveboracensis, *Porzana*, 160.
 Seiurus, 297.
 Vireo, 286.
Numenius borealis, 191.
 hudsonicus, 189.
 longirostris, 189.
Nuthatch, Red-breasted, 11, 34, 254, 308.
 White-breasted, 308.
Nuttallornis borealis, 230.
Nyctanassa violacea, 158.
Nyctea nyctea, 220.
nyctea, *Nyctea*, 220.
Nycticorax nycticorax nævius, 156.
Nyssa sylvatica, 9.

OAK, Black, 9.
 Chinquapin, 9.
 Red, 9, 43.
 Swamp White, 9.
 White, 9, 43, 307.
obscura, *Anas*, 122, 127, 128, 321.
obsoletus, *Falco rusticolus*, 212.

occidentalis, *Ereunetes*, 179.
 Pelecanus, 117.
Ocean and its Birds, 12.
oceanicus, *Oceanites*, 110.
Oceanites oceanicus, 110.
Oceanodroma leucorhoa, 109.
Ochthodromus wilsonius, 199.
oculata, *Chalinopsilla*, 18.
officinale, *Sassafras*, 9.
Oidemia americana, 142.
 deglandi, 145.
 perspicillata, 146.
Oil-bird, 107.
Olbiorchilus biemalis, 305.
Old Squaw, 15, 16, 17, 52, 83, 137, 140.
Oldwines, 68.
olivaceus, *Vireo*, 284.
Olive-backed Thrush, 312.
Olive-sided Flycatcher, 10, 230.
Olor buccinator, 63, 151.
 columbianus, 63, 150.
Ommastrephes illecebrosus, 13, 19.
ophioglossoides, *Pogonia*, 33.
Ophiopholis aculeata, 18.
Orache, *Halberd-leaved*, 33.
Orange-crowned Warbler, 288.
Orchard Oriole, 10, 246.
Orchestia agilis, 19.
Oriole, 310.
 Baltimore, 72, 245, 246, 280.
 Orchard, 10, 246.
ornatus, *Calcarius*, 257.
Ornithological History of Essex County, 60.
oryzivorus, *Dolichonyx*, 244.
Osprey, 125.
 American, 212, 214.
Ostrya virginica, 9.
Otocoris alpestris, 232.
 alpestris arenicola, 237.
 alpestris praticola, 235.
Oven-bird, 35, 45, 46, 296.
Owl, 68, 243.
 Acadian, 219.
 American Barn, 215.
 American Hawk, 221.
 American Long-eared, 215.
 Barn, 10.
 Barred, 46, 215, 217.
 Burrowing, 221.
 Great Gray, 217.
 Great Horned, 44, 220.
 Mottled, 217.
 Pinny, 88.
 Richardson's, 218.
 Saw-whet, 48, 219.
 Screech, 219.
 Short-eared, 39, 55, 216.
 Snowy, 220, 242.
Oxyechus vociferus, 195.
Oyster, 34.

PAGOPHILA alba, 88.
Pagurus bernhardus, 18.
Pale-belly, 194.
pallasii, *Hylocichla guttata*, 312.

- palliata, Litorina, 19.
 Palm Warbler, 295, 319.
 palmorum, Dendroica, 295.
 palustris, Telmatodytes, 306.
 Pandion haliaetus carolinensis, 214.
 papyrifera, Betula, 9, 10.
 paradisaea, Sterna, 105.
 Parasitic Jaeger, 86, 87.
 parasiticus, Stercorarius, 87.
 parma, Echinarachnius, 18.
 Paroquet, 82.
 Parrot, Sea, 82.
 Partridge, 60, 68, 69, 202.
 Spruce, 201.
 Parula Warbler, 35, 56.
 Parus atricapillus, 309.
 hudsonicus, 309.
 Passenger Pigeon, 65, 66, 67, 203.
 Passer domesticus, 316.
 Passerculus princeps, 258, 264.
 sandwichensis savanna, 263.
 savanna, 260.
 Passerella iliaca, 272.
 Passerina nivalis, 253.
 passerinus, Coturniculus savannarum, 264.
 Pasture Plover, 186.
 patens, Spartina, 37.
 Pavoncella pugnax, 186.
 Peabody-bird, 269.
 Pectoral Sandpiper, 22, 39, 171, 188.
 Peep, 25, 26, 174, 175, 177, 196.
 Web-footed, 163.
 pelagica, Chatura, 228.
 Pelecanus erythrorhynchos, 117.
 occidentalis, 117.
 Pelican, American White, 117.
 Brown, 117.
 Pelidna alpina sakhalina, 176.
 penelope, Mareca, 129.
 Penguin, 61, 85.
 pennsylvanicum, Acer, 9, 10.
 pensilvanicus, Anthus, 302.
 pensylvanica, Dendroica, 293.
 peregrina, Helminthophila, 289.
 Perisoreus canadensis, 237.
 Periwinkle, 19, 169, 240.
 European, 19.
 perspicillata, Oidemia, 146.
 Peter, Blue, 162.
 Petrel, 13, 14, 15, 56, 57.
 Leach's, 14, 16, 109, 111.
 Stormy, 110.
 Wilson's, 13, 15, 108, 110.
 Petrochelidon lunifrons, 277.
 Pewee, Wood, 47, 231.
 Phalacrocorax carbo, 61, 114.
 dilophus, 61, 114, 115.
 Phalaris arundinacea, 43.
 Phalarope, 14, 22, 39, 56.
 Northern, 16, 56, 51, 163.
 Red, 16, 163, 164.
 Wilson's, 164.
 Phalaropus lobatus, 163.
 Phasianus torquatus, 315.
 Pheasant, 47, 64, 152, 203, 219.
 Pheasant, Ring, 28, 33, 315.
 Pheasants, 68.
 Philadelphia Vireo, 285.
 philadelphia, Geothlypis, 298.
 Larus, 100.
 philadelphicus, Vireo, 285.
 Philohela minor, 166.
 Phoca vitulina, 12.
 Phocæna phocæna, 13.
 phocæna, Phocæna, 13.
 Phœbe, 47, 213, 229, 230.
 phœbe, Sayornis, 230.
 phœniceus, Agelaius, 245.
 physalus, Balanoptera, 13.
 Picea nigra, 9, 10.
 Picoides americanus, 224.
 arcticus, 224.
 Pied Duck, 62, 141.
 Pied-billed Grebe, 15, 52, 79.
 Pigeon, 60, 66, 68, 69.
 Hawk, 213.
 Woodpecker, 226.
 Pigeon, Domestic, 223.
 Passenger, 65, 66, 67, 203.
 Sea, 83.
 Wild, 66, 203.
 Pig-nut Hickory, 9.
 Pine Finch, 252.
 Grosbeak, 34, 249.
 Knot, 85.
 Siskin, 252.
 Warbler, 35, 295.
 Pine, Norway, 9.
 Pitch, 9, 31, 32, 239, 295, 307, 309.
 Red, 9, 43.
 White, 8, 32, 43, 239, 295, 307.
 Pinicola enucleator leucura, 249.
 Pinny Owl, 88.
 Pintail, 52, 125, 129, 133, 321.
 Pinus resinosa, 9.
 rigida, 9, 32.
 strobus, 9, 32.
 pinus, Spinus, 252.
 Pipilo erythrophthalmus, 273.
 Piping Plover, 21, 28, 34, 39, 197, 199.
 Pipit, 24, 173, 234.
 American, 34, 41, 302.
 Piranga erythromelas, 276.
 ludoviciana, 276.
 rubra, 276.
 Pitch Pine, 9, 31, 32, 239, 295, 307, 309.
 Pitcher-plant, 265.
 Plantago decipiens, 37.
 Plantain, Seaside, 37.
 platypterus, Buteo, 210.
 Plautus impennis, 60, 85.
 Plover, 56, 57, 68, 69, 200.
 American Golden, 194.
 Beach, 179.
 Belted Piping, 198.
 Black-bellied, 21, 28, 39, 169, 185, 192,
 195, 199, 241.
 Blue, 169.
 Chicken, 200.
 Golden, 14, 21, 39, 194.

- Plover, Green, 194.
 Greene, 63.
 Pasture, 186.
 Piping, 21, 28, 34, 39, 197, 199.
 Red-breasted, 169.
 Ring-neck, 28, 55.
 Semipalmated, 21, 39, 196, 198, 199.
 Silver, 169.
 Upland, 39, 186.
 Wilson's, 10, 199.
- Plum, Beach, 32.
- Poacher, 130.
- Podiceps cristatus, 79.
 podiceps, Podilymbus, 79.
 Podilymbus podiceps, 79.
 Pogonia ophioglossoides, 33.
 Poison Ivy, 32.
 Sumach, 31, 240.
- Polinices duplicata, 19.
 heros, 19, ? 240.
- Poliophtila cærulea, 310.
- Pollachius virens, 20.
- Pollack, 20.
- pollicaris, Rissa tridactyla, 89.
 polyglottos, Mimus, 303.
- Polygonella articulata, 33.
 polygonifolia, Euphorbia, 33.
 polyphemus, Limulus, 19.
- Pomarine Jaeger, 86.
- pomarinus, Stercorarius, 86.
- Pond Crow, 162.
 Shelldrake, 117.
- Poocetes gramineus, 257.
 populifolia, Betula, 9, 32.
- Populus tremuloides, 32.
- porcina, Carya, 9.
- Porpoise, Harbor, 13.
- Porzana carolina, 160.
 jamaicensis, 160.
 noveboracensis, 160.
- Potato Beetle, 274.
- Potentilla anserina, 37.
 tridentata, 10.
- Poterium canadense, 33.
- Poverty Grass, 32.
- Prairie Horned Lark, 233, 234, 235.
 Warbler, 35, 296.
- praticola, Otocoris alpestris, 235.
- pratincola, Strix, 215.
- princeps, Passerculus, 258, 264.
- principalis, Corvus corax, 67, 238.
- prinoides, Quercus, 19.
- Puffinus cinereus, 109.
- Progne subis, 277.
- Prong-horn, 163.
- Prunus maritima, 32.
 serotina, 9.
- pseudacacia, Robinia, 9.
- Ptarmigan, Willow, 202.
- Puccinellia maritima, 37.
- Puff-ball, Star-shaped, 33.
- Puffin, 15, 82.
- Puffing-pig, 13.
- Puffinus fuliginosus, 109.
 gravis, 107.
- Puffinus puffinus, 108.
 putlinus, Puffinus, 108.
 pugnax, Pavoncella, 186.
 pulchellus, Calopogon, 33.
 Purple Finch, 246, 249, 293.
 Gallinule, 10, 161.
 Gerardia, 33.
 Grackle, 247.
 Martin, 44, 70, 72, 73, 277, 317.
 Sandpiper, 16, 22, 39, 170.
- purpurea, Gerardia, 33.
 purpureus, Carpodacus, 249.
- pusilla, Spizella, 270.
 Wilsonia, 301.
- pusillus, Ereunetes, 177.
- QUAIL, 69, 201.
 Marsh, 246.
- Quaille, 68.
- Quawk, 156.
- Quercus alba, 9.
 bicolor, 9.
 prinoides, 9.
 rubra, 9.
 velutina, 9.
- Querquedula discors, 131.
- Quiscalus quiscula, 247.
 quiscula æneus, 247.
- quiscula, Quiscalus, 247.
- Quohog, 19.
- RABBIT, Jack, 33, 279.
- Race, Cape, 81.
- Racer, Cape, 81.
- Raia, 20.
- Rail, 41, 56, 57, 142.
 Black, 160.
 Carolina, 38, 44, 46, 48, 160.
 Clapper, 159.
 King, 10, 158, 159.
 Sora, 38, 44, 159, 160.
 Virginia, 38, 44, 159, 160.
 Yellow, 38, 45, 160.
- Rallus crepitans, 159.
 elegans, 158.
 virginianus, 159.
- Raven, 70.
 Northern, 67.
 Northern American, 238.
- Razor Shell, 241.
- Razor-billed Auk, 15, 84.
- Razor-fish, 19.
- Recurvirostra americana, 165.
- Red Birch, 9, 32.
 Cedar, 9, 32.
 Crossbill, 250.
 Maple, 9, 32, 43, 307.
 Oak, 9, 43.
 Phalarope, 16, 163, 164.
 Pine, 9, 43.
 Seaweeds, 20.
 Spruce, 9.
- Red-backed Sandpiper, 22, 39, 176.
- Red-bellied Nuthatch, 254.

- Red-breasted Merganser, 14, 15, 17, 23, 27,
 34, 38, 52, 80, 117, 118, 138, 140, 145.
 Nuthatch, 11, 308.
 Plover, 169.
 Snipe, 167.
 Red-eyed Vireo, 47, 219, 284, 285, 286.
 Redhead, 52, 134, 135, 139.
 Red-headed Woodpecker, 225.
 Red-legged Black Duck, 15, 23, 38, 49, 122,
 125, 126.
 Redpoll, 251, 252.
 Red-poll Warbler, 295.
 Redpoll, Greater, 251.
 Hoary, 251.
 Holbaell's, 251.
 Yellow, 296.
 Red-shouldered Hawk, 44, 46, 72, 208.
 Redstart, 35, 47.
 American, 301.
 Red-tailed Hawk, 208.
 Red-throated Diver, 15, 77, 81.
 Red-winged Blackbird, 24, 34, 40, 44, 45, 46,
 47, 73, 241, 242, 245, 306.
 Reed Canary-grass, 43.
 Regulus calendula, 310.
 satrapa, 310.
 repens, Epigaea, 9.
 resinosa, Pinus, 9.
 Rhododendron rhodora, 32.
 Rhodophyceæ, 20.
 Rhodora, 32.
 rhodora, Rhododendron, 32.
 Rhus glabra, 240.
 toxicodendron, 32.
 typhina, 32, 240.
 venenata, 32, 240.
 Rhynchophanes moccovii, 257.
 richardsoni, Cryptoglaux tengmalmi, 218.
 Richardson's Owl, 218.
 rigida, Pinus, 9, 32.
 Ring Pheasant, 28, 33, 315.
 Ring-billed Gull, 16, 33, 98, 102.
 Ring-neck, 196, 200.
 Ring-neck Plover, 28, 55.
 Ring-necked Duck, 137.
 Riparia riparia, 282.
 riparia, Riparia, 282.
 Rissa tridactyla, 88.
 pollicaris, 89.
 Robin, 24, 29, 34, 40, 45, 46, 47, 56, 73, 217,
 222, 248, 310, 313, 317.
 Snipe, 167.
 Robin, American, 313.
 Golden, 246.
 Robinia pseudacacia, 9.
 Rock Crab, 18, 241.
 Snipe, 170.
 Rockweed, 20.
 Rosa, 32.
 Rose, Wild, 32, 232, 306.
 Roseate Tern, 105, 319.
 Rose-breasted Grosbeak, 45, 47, 72, 274.
 Rosemary, Marsb, 37.
 rostrata, Acanthis linaria, 251.
 rotundifolia, Viola, 10.
 Round-leaved Violet, 10.
 Royal Tern, 10, 20, 102.
 rubra, Piranga, 276.
 Quercus, 9.
 rubricapilla, Helminthophila, 288.
 rubripes, Anas obscura, 125, 126, 321.
 rubrum, Acer, 9, 32.
 Ruby-crowned Kinglet, 310.
 Ruby-throated Hummingbird, 56, 228.
 Ruddy Duck, 49, 52, 145, 146.
 Turnstone, 200.
 rudis, Litorina, 19, 240.
 Ruff, 186.
 Ruffed Grouse, 202, 315.
 rufum, Toxostoma, 304.
 Run Cherry, 9, 283.
 Rusty Blackbird, 247, 248.
 Grackle, 40.
 ruticilla, Setophaga, 301.
 SACCHARINUM, Acer, 9.
 saccharum, Acer, 9.
 Saddle-back, 90.
 sakhalina, Pelidna alpina, 176.
 Salicornia herbacea, 37.
 Salix, 32.
 Salsola kali, 33.
 Salt Marshes and their Birds, 36.
 Salt-grass, 36, 37.
 Saltwort, 33.
 Samphire, 37.
 sancti-johannis, Archibuteo lagopus, 210.
 Sand Beaches and their Birds, 18.
 Dunes and their Birds, 30.
 Flea, 169.
 Sand-dollar, 18.
 Sanderling, 22, 28, 29, 39, 64, 176, 179.
 Sanderlins, 64.
 Sandhill Crane, 63, 158.
 Sand-peep, 175, 177.
 Sandpiper, 23, 56, 57, 59, 69, 104, 173, 175,
 176, 184, 196, 200, 213, 253, 254.
 Baird's, 173.
 Bartramian, 21, 186.
 Bonaparte's, 39, 172, 174.
 Buff-breasted, 22, 187.
 Curlew, 177.
 Least, 22, 39, 174, 178, 179, 199.
 Pectoral, 22, 39, 171, 188.
 Purple, 16, 22, 39, 170.
 Red-backed, 22, 36, 176.
 Semipalmated, 22, 28, 39, 55, 164, 173,
 174, 175, 177, 197, 213.
 Solitary, 21, 39, 184, 189.
 Spotted, 22, 29, 39, 46, 185, 188, 197.
 Stilt, 22, 39, 168.
 Western Semipalmated, 179.
 White-rumped, 22, 172, 176.
 Sapsucker, Yellow-bellied, 56, 224.
 Sassafras, 9.
 officinale, 91.
 satrapa, Regulus, 310.
 Savanna Sparrow, 24, 25, 28, 32, 34, 40, 56,
 217, 259, 260, 262, 263, 265, 267, 317.
 savanna, Passerculus, 260.

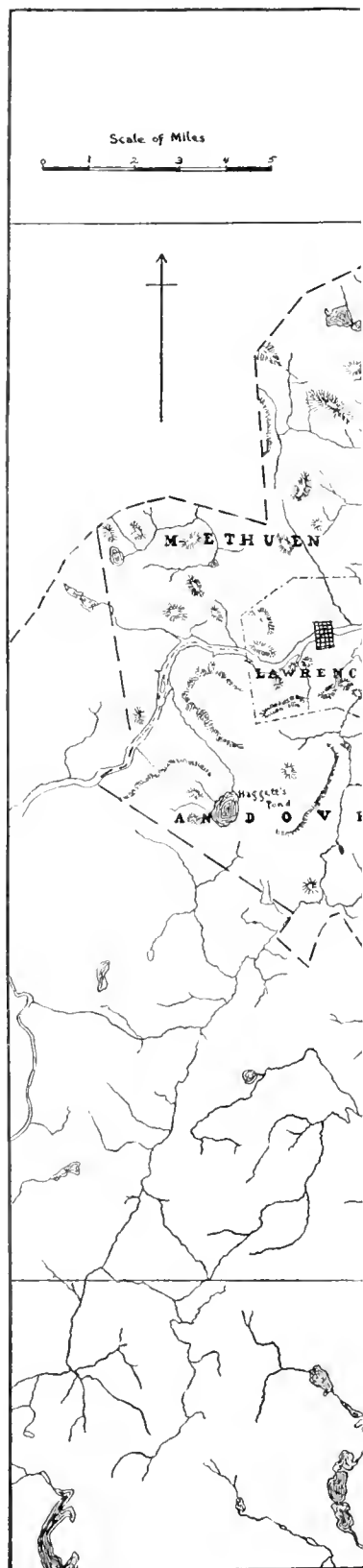
- savanna, *Passerculus sandwichensis*, 263.
 Saw-whet Owl, 48, 219.
 Sayornis phœbe, 230.
 Scape-grace, 81.
 Scarlet Tanager, 276.
 Scaup, 17, 130.
 Duck, 135.
 Scaup, Greater, 49, 52, 134, 135, 136, 321.
 Lesser, 49, 52, 135, 136.
 Scirpus lacustris, 43.
 scolopaceus, *Macrorhamphus*, 168.
 Scoter, 14, 15, 16, 17, 26, 41, 72, 137, 146, 171.
 American, 27, 52, 126, 142, 145, 146.
 Black, 142.
 Surf, 23, 27, 52, 143, 144, 146.
 White-winged, 27, 52, 120, 143, 144, 145, 146.
 Scotiaptex nebulosa, 217.
 Screech Owl, 219.
 Scud, 19.
 Sea Clam, 21.
 Duck, 141.
 Goose, 57, 163.
 Lettuce, 20.
 Parrot, 82.
 Pigeon, 83.
 Snail, 241.
 Sea hen, 85, 87.
 Seal, Harbor, 12, 96.
 Sea-larkes, 68.
 Sea-rocket, American, 33.
 Seaside Gerardia, 37.
 Golden-rod, 33, 37.
 Plantain, 37.
 Sparrow, 267.
 Sea-urchin, 18, 241.
 Seaweeds, Red, 20.
 Seiurus aurocapillus, 296.
 noveboracensis, 297.
 semipalmata, *Egialitis*, 196.
 Symphemia, 185.
 Semipalmated Plover, 21, 39, 196, 198, 199.
 Sandpiper, 22, 28, 39, 55, 164, 173, 174, 175, 177, 197, 213.
 sempervirens, *Solidago*, 33, 37.
 serotina, *Prunus*, 9.
 serrator, *Merganser*, 118.
 Setophaga ruticilla, 301.
 Shad bush, 32, 43.
 Shag, 56, 115.
 Shag-bark Hickory, 9.
 Shape, 61.
 Sharke, 61.
 Sharp-shinned Hawk, 104, 207.
 Sharp-tailed Sparrow, 5, 40, 41, 152, 264, 265, 266.
 Shearwater, 13, 15.
 Black-tailed, 109.
 Greater, 15, 107, 109.
 Manx, 108.
 Sooty, 15, 108, 109.
 Sheldrakes, 67, 68.
 Shell, Razor, 241.
 Shelldrake, 14, 17, 23, 26, 41, 118.
 Pond, 117.
 Shite-poke, 156.
 Shore Lark, 232.
 Short-billed Marsh Wren, 45, 305.
 Short-eared Owl, 39, 55, 216.
 Shoveler, 52, 132.
 Shrike, 288.
 Migrant, 284.
 Northern, 283.
 Northern Loggerhead, 284.
 Sialia sialis, 314.
 sialis, *Sialia*, 314.
 Sickie-bill, 189, 191.
 Simplicities, 63.
 Silver Maple, 9.
 Plover, 169.
 Silver-weed, 37.
 silvestris, *Meleagris gallopavo*, 64, 203.
 Siskin, Pine, 252.
 Sitta canadensis, 308.
 carolinensis, 308.
 Skate, 20.
 Skua, 86.
 Gull, 86.
 skua, *Megalestris*, 86.
 Skunk-head, 146.
 Skunks, Tracks of, 33.
 Slipper, Lady's, 32.
 Small Green-crested Flycatcher, 231.
 Small Magnolia, 9.
 Small-headed Flycatcher, 318.
 Smilax, 300.
 Smooth Sumach, 240.
 Snail, 19.
 Sea, 241.
 Snipe, 64, 69.
 English, 166, 197.
 Jack, 166.
 Red-breasted, 167.
 Robin, 167.
 Rock, 170.
 Wilson's, 21, 22, 39, 166, 172.
 Winter, 170.
 Snites, 68.
 Snow Bunting, 5, 24, 27, 28, 32, 34, 44, 234, 253, 255, 256, 262, 302.
 Goose, 62.
 Snowbird, 270.
 Snowflake, 253.
 Snowy Heron, 155.
 Owl, 220, 242.
 socialis, *Spizella*, 270.
 Solan Goose, 113.
 Solidago sempervirens, 32, 37.
 solidissima, *Spisula*, 19, 21.
 solitarius, *Helodromas*, 184.
 Vireo, 286.
 Solitary Sandpiper, 21, 39, 184, 189.
 Vireo, 56, 286.
 Somateria dresseri, 141.
 mollissima borealis, 141.
 spectabilis, 142.
 Song Sparrow, 24, 25, 29, 34, 40, 46, 207, 213, 217, 268, 271, 273, 318.
 Sooty Shearwater, 15, 108, 109.
 Tern, 106, 319.

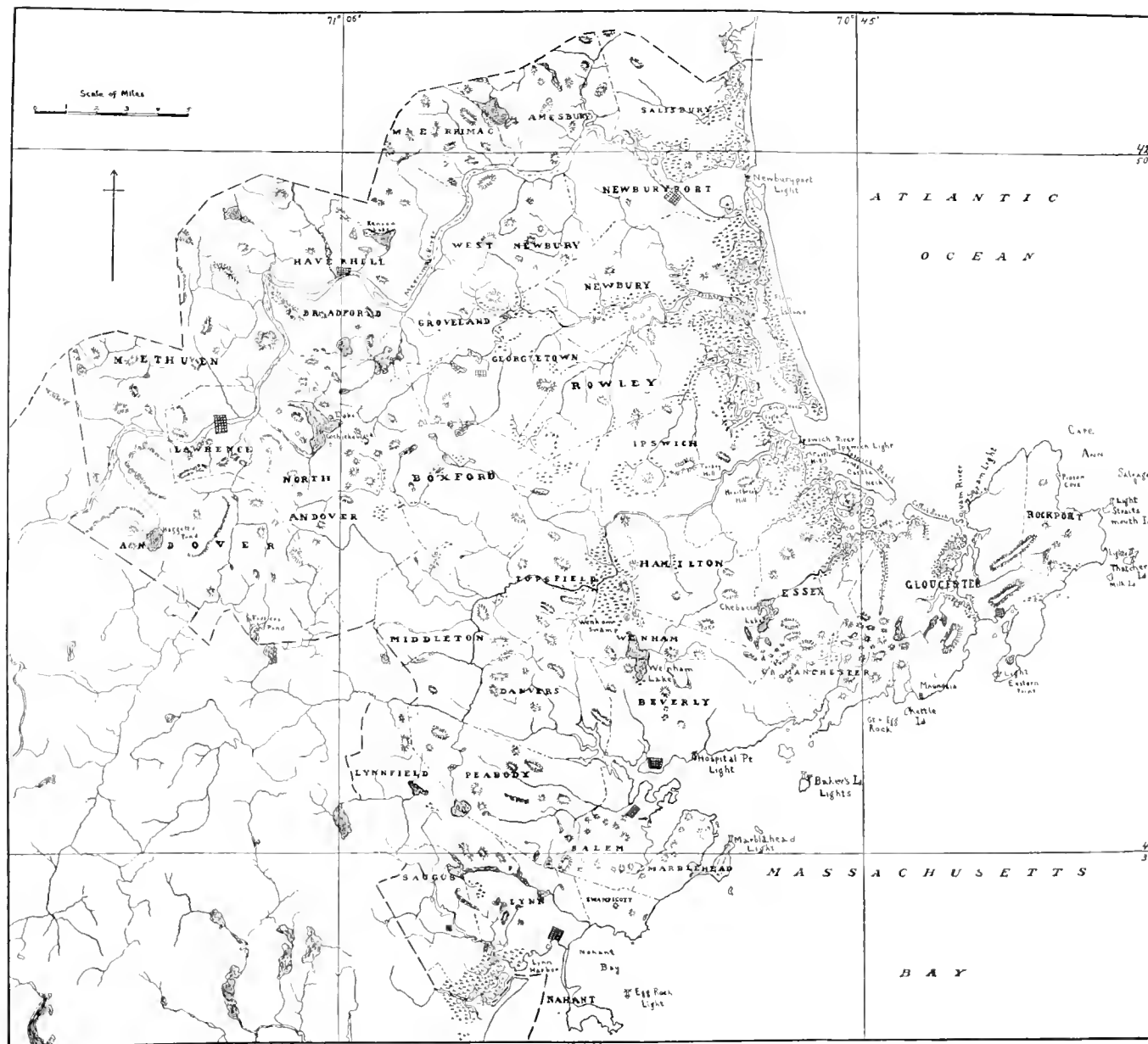
- Sora, 160.
 Rail, 38, 44, 159, 160.
 Sparrow, 64, 104, 213.
 Acadian Sharp-tailed, 40, 266, 267.
 Baird's, 259, 264.
 Chipping, 268, 270, 272.
 English, 19, 72, 73, 223, 248, 277, 282, 316.
 European House, 316.
 Field, 270.
 Fox, 257, 270, 271, 272, 317.
 Grasshopper, 264.
 Henslow's, 265, 319.
 Ipswich, 5, 24, 25, 28, 30, 32, 34, 40, 71, 234, 253, 256, 258, 264.
 Large Barren-ground, 259.
 Lark, 268.
 Lincoln's, 271.
 Nelson's Sharp-tailed, 40, 266, 267.
 Savanna, 24, 25, 28, 32, 34, 40, 56, 217, 259, 260, 262, 263, 265, 267, 317.
 Seaside, 10, 267.
 Sharp-tailed, 5, 40, 41, 152, 264, 265, 266.
 Song, 24, 25, 29, 34, 40, 46, 207, 213, 217, 268, 271, 273, 318.
 Swamp, 44, 45, 46, 47, 48, 53, 56, 272.
 Tree, 28, 269.
 Vesper, 257, 268, 271.
 White-crowned, 269.
 White-throated, 56, 269.
 Yellow-winged, 264.
 Spartina patens, 37.
 stricta, 36.
 sparverius, Falco, 213.
 Spatula clypeata, 132.
 spectabilis, Somateria, 142.
 Speotyto cunicularia hypogaea, 221.
 Sphyrapius varius, 224.
 spicatum, Acer, 10.
 Spider-catcher, 55.
 Spinus pinus, 252.
 Spiraea salicifolia, var. latifolia, 32, 232.
 Spisula solidissima, 19, 21.
 Spiza americana, 275.
 Spizella monticola, 269.
 pusilla, 270.
 socialis, 270.
 Sponge, Finger, 18.
 sponsa, Aix, 133.
 Spoonbill, 132.
 Spotted Sandpiper, 22, 29, 39, 46, 185, 188, 197.
 Sprigtail, 133.
 Spring Black Duck, 122.
 Spruce, 309.
 Partridge, 201.
 Spruce, Black, 9, 10.
 Red, 9.
 White, 9.
 spurius, Icterus, 246.
 Squalus acanthias, 20.
 Squatarola, squatarola, 192.
 squatarola, Squatarola, 192.
 Squaw, Old, 52, 83, 137, 140.
 Squid, 13, 19, 108, 109.
 Staghorn Sumach, 32, 240, 241.
 Starfish, 18.
 Starlings, 70.
 Star-shaped Puff-ball, 33.
 Statice limonium, var. caroliniana, 37.
 Steganopus tricolor, 164.
 stellaris, Cistothorus, 305.
 Stercorarius longicaudus, 87.
 parasiticus, 87.
 pomarinus, 86.
 Sterna antillarum, 106.
 caspia, 101.
 dougalli, 105.
 forsteri, 102.
 fuliginosa, 106.
 hirundo, 102.
 maxima, 102.
 paradisæa, 105.
 Stilt Sandpiper, 22, 39, 168.
 Stilt, Black-necked, 10, 165.
 Stormy Petrel, 110.
 streperus, Chauleasmus, 129.
 striata, Dendroica, 294.
 stricta, Spartina, 36.
 Striped Maple, 9, 10.
 Strix pratensis, 215.
 strobilus, Pinus, 9, 32.
 Strongylocentrotus dröbachiensis, 18.
 Sturnella magna, 246.
 Sub-Canadian Zone, 10.
 subis, Progne, 277.
 subruficollis, Tryngites, 187.
 subvirgatus, Ammodramus nelsoni, 267.
 Sugar Maple, 9.
 Sula bassana, 112.
 sula, 112.
 sula, Sula, 112.
 Sumach, Poison, 32, 240.
 Smooth, 240.
 Staghorn, 32, 240, 241.
 Summer, 183.
 Black Duck, 122.
 Duck, 133.
 Tanager, 18, 276.
 Yellow-legs, 167, 183.
 Sundew, 33.
 Surf Scoter, 23, 27, 52, 143, 144, 146.
 surinamensis, Hydrochelidon nigra, 106.
 Surnia ulula caparoch, 221.
 swainsoni, Buteo, 209.
 swainsonii, Hylodichla ustulata, 312.
 Swainson's Hawk, 209.
 Thrush, 312.
 Swallow, 20, 25, 44, 56.
 Bank, 24, 29, 34, 40, 281, 282.
 Barn, 24, 29, 40, 279, 281, 283.
 Chimney, 228.
 Cliff, 29, 40, 277, 281.
 Eave, 24, 43, 277, 283, 317, 318.
 Tree, 24, 29, 34, 40, 46, 47, 72, 73, 227, 279, 283, 317.
 White-bellied, 279.
 Swallow-tailed Kite, 10, 205.
 Swamp Hickory, 9.

- Swamp Sparrow, 44, 45, 46, 47, 48, 53, 56, 272.
 White Oak, 9.
 Swan, 63, 68, 69.
 Trumpeter, 63, 151.
 Whistling, 63, 147, 150.
 Sweet Birch, 9.
 Flag, 43.
 Gale, 32, 33.
 Sweet-grass, 37.
 Swifts, 44, 73.
 Chimney, 228.
sylvatica, Nyssa, 9.
Symphemia semipalmata, 185.
Syrnium varium, 217.
 TALORCHESTIA longicornis, 19.
 Tanager, Louisiana, 276.
 Scarlet, 276.
 Summer, 10, 276.
 Tantalus loculator, 151.
 Tattler, 169.
 Greater, 182.
 Teal, 45, 48, 67.
 Blue-winged, 52, 56, 57, 125, 131.
 Green-winged, 52, 131, 132.
 Teale, 68.
 Telmatodytes palustris, 306.
 Tennessee Warbler, 289.
 Tern, 13, 14, 15, 16, 21, 22, 27, 37, 72, 87, 89, 188.
 Arctic, 16, 23, 34, 103, 104, 105.
 Black, 16, 23, 106.
 Caspian, 16, 23, 101.
 Common, 13, 15, 16, 25, 34, 38, 102, 105, 107, 176, 183.
 Gull-billed, 101.
 Least, 34, 106.
 Marsh, 101.
 Roseate, 105, 319.
 Royal, 10, 20, 102.
 Sooty, 106, 319.
 Wilson's, 102.
 Teter-peep, 188.
 Thatch-grass, 264, 266.
 Thrasher, Brown, 56, 57, 304.
 Three-toothed Cinque-foil, 10.
 Threshsels, 70.
 Thrush, 70.
 Bicknell's, 312.
 Brown, 300, 304.
 Gray-checked, 312.
 Hermit, 10, 312.
 Olive-backed, 312.
 Swainson's, 312.
 Varied, 314.
 Wilson's, 46, 47, 311.
 Wood, 45, 46, 47, 311, 313.
 Thryothorus ludovicianus, 304.
 Tiger Beetle, 20.
tigrina, Dendroica, 289.
tinctoria, Genista, 9.
 Tinker, 84.
 Titlark, 41, 302.
 Titmouse, 56.
 Toad, Tracks of, 33.
togata, Bonasa umbellus, 202.
tomentosa, Hudsonia, 32, 206.
 Topography and Faunal Areas, 6.
 Torch, Little, 301.
torda, Alca, 84.
torquatus, Phasianus, 315.
Totanus flavipes, 183.
 melanoleucus, 182.
 Towhee, 273.
toxicodendron, Rhus, 32.
Toxostoma rufum, 304.
 Transition Zone, 10.
 Tree Sparrow, 28, 269.
 Swallow, 24, 29, 34, 40, 46, 47, 72, 73, 227, 279, 283, 317.
tremuloides, Populus, 32.
tricolor, Steganopus, 164.
tridactyla, Rissa, 88.
tridentata, Potentilla, 10.
Tringa canutus, 169.
tristis, Astragalinus, 252.
trivittata, Nassa, 19.
Trochilus colubris, 228.
Troglodytes aëdon, 304.
troile, Uria, 84.
 Trumpeter Swan, 63, 151.
Tryngites subruficollis, 187.
Tsuga canadensis, 9, 32.
 Tupelo, 9.
 Turkey, 60.
 Vulture, 10, 204.
 Turkey, Wild, 64, 65, 69, 203.
 Turkeys, 67.
 Turnstone, 22, 26, 28, 39, 170.
 Ruddy, 200.
Tursiops truncatus, 13.
 Turtle, 68.
 Twin-flower, 10.
Tympanuchus cupido, 64, 203.
typhina, Rhus, 32, 240.
Tyrannus dominicensis, 230.
 tyrannus, 229.
tyrannus, Tyrannus, 229.
 ULMUS americana, 9, 10, 32.
 Ulva lactuca, 20.
umbellus, Bonasa, 202.
undatum, Buccinum, 19.
 Upland Plover, 39, 186.
 Upper Austral Zone, 10.
 Uria lomvia, 84.
 troile, 84.
urubu, Catharista, 205.
 Usnea, 289.
usnea, Comptoshyllis americana, 289.
 VACCINIUM macrocarpon, 33, 240.
 vitis-idaea, var. *minus*, 10.
vallisneria, Aythya, 135.
varia, Mnioilta, 287.
 Varied Thrush, 314.
varium, Syrnium, 217.
varius, Sphyrapicus, 224.
 Veery, 45, 47, 311.
velox, Accipiter, 207.

- velutina, *Quercus*, 9.
 venenata, *Rhus*, 32, 240.
 vermivorus, *Helmintherus*, 287.
 versicolor, *Iris*, 33.
 vesiculosus, *Fucus*, 20.
 Vesper Sparrow, 257, 268, 271.
 vespertina, *Hesperiphona*, 248.
Viburnum alnifolium, 10.
 Viemalin, 70.
 vigorsii, *Dendroica*, 295.
 villosus, *Dryobates*, 223.
Viola rotundifolia, 10.
 violacea, *Nyctanassa*, 158.
 Violet, Dog-tooth, 43.
 Round-leaved, 10.
 virens, *Contopus*, 231.
 Dendroica, 295.
 Icteria, 298.
 Pollachius, 20.
 Vireo, 285.
 flavifrons, 286.
 gilvus, 285.
 noveboracensis, 286.
 olivaceus, 284.
 philadelphicus, 285.
 solitarius, 286.
 Vireo, Blue-headed, 10, 286.
 Philadelphia, 285.
 Red-eyed, 47, 219, 284, 285, 286.
 Solitary, 56, 286.
 Warbling, 72, 285, 286.
 White-eyed, 10, 73, 286.
 Yellow-throated, 286.
 virescens, *Butorides*, 156.
 Empidonax, 231.
 Virginia Rail, 38, 44, 159, 160.
 Virginian Juniper, 291.
 virginiana, *Juniperus*, 9, 32.
 virginianus, *Bubo*, 220.
 Chordeiles, 228.
 Colinus, 201.
 Rallus, 159.
 virginica, *Ostrya*, 9.
 vitulina, *Phoca*, 12.
 vociferus, *Antrostomus*, 227.
 Oxyechus, 195.
 vulgaris, *Asterias*, 18.
 Berberis, 9.
 Vulture, Black, 10, 205.
 Turkey, 10, 204.
 WARBLER, 44, 45, 46, 47, 104, 207, 301, 310.
 Bay-breasted, 35, 293.
 Black and White, 35, 287, 310.
 Black and Yellow, 292.
 Blackburnian, 10, 35, 294.
 Black-poll, 35, 48, 294.
 Black-throated Blue, 35, 290, 293.
 Black-throated Green, 35, 219, 288, 295.
 Canadian, 11, 35, 301.
 Cape May, 289.
 Cerulean, 293.
 Chestnut-sided, 35, 293.
 Connecticut, 297.
 Golden-winged, 73, 287.
 Kentucky, 297.
 Magnolia, 35, 56, 292.
 Mourning, 298.
 Myrtle, 28, 290.
 Nashville, 10, 35, 288.
 Northern Parula, 289.
 Orange-crowned, 288.
 Palm, 295, 319.
 Parula, 35, 56.
 Pine, 35, 295.
 Prairie, 35, 296.
 Red-poll, 295.
 Tennessee, 289.
 Wilson's, 301.
 Worm-eating, 10, 287.
 Yellow, 35, 47, 290.
 Yellow Palm, 35, 296.
 Yellow Redpoll, 56.
 Yellow-rumped, 34, 35, 227, 280, 290, 294, 309.
 Warbling Vireo, 72, 285, 286.
 Water-Thrush, 35, 297.
 Water-witch, 79.
 Waxwing, Bohemian, 283, 319.
 Cedar, 283.
 Web-footed Peep, 163.
 Weed, Dyer's, 9.
 Western Dowitcher, 168.
 Gull, 22.
 Meadowlark, 247.
 Semipalmated Sandpiper, 179.
 Whale, Finback, 13.
 White, 13.
 Whelk, 19, 241.
 Whippoorwill, 68.
 Whip-poor-will, 44, 45, 46, 47, 48, 227, 287.
 Whistler, 15, 27, 38, 41, 50, 52, 134, 137, 145.
 Whistling Swan, 63, 147, 150.
 White Ash, 9.
 Birch, 9, 32.
 Cedar, 9, 265.
 Oak, 9, 43, 307.
 Pine, 8, 32, 43, 239, 295, 307.
 Spruce, 9.
 Whale, 13.
 White-bellied Swallow, 279.
 White-breasted Nuthatch, 308.
 White-crowned Sparrow, 269.
 White-eyed Vireo, 10, 73, 286.
 White-rumped Sandpiper, 22, 172, 176.
 White-throated Sparrow, 56, 269.
 White-winged Coot, 145.
 Crossbill, 250.
 Scoter, 27, 52, 120, 143, 144, 145, 146.
 Whitey, 179.
 Widgeon, 125, 135.
 American, 49, 50, 52, 130.
 Bluebill, 135.
 European, 129, 130.
 Widgins, 68.
 Wild Black Cherry, 9, 283.
 Goose, 45, 54, 148.
 Pigeon, 66, 203.
 Rose, 32, 206, 232, 316.
 Turkey, 64, 65, 69, 203.

- Willet, 22, 39, 68, 166, 185.
 Willow, 32, 43.
 Ptarmigan, 202.
 Wilsonia canadensis, 301.
 pusilla, 301.
 wilsonia, *Aegialitis*, 199.
 wilsonianus, Asio, 215.
 wilsonius, *Ochthodromus*, 199.
 Wilson's Petrel, 13, 15, 108, 110.
 Phalarope, 164.
 Plover, 10, 199.
 Snipe, 21, 22, 39, 166, 172.
 Tern, 102.
 Thrush, 46, 47, 311.
 Warbler, 301.
 Winter, 182, 184.
 Black Duck, 126.
 Gull, 88.
 Snipe, 170.
 Wren, 11, 305.
 Yellow-Legs, 182, 184, 199.
 Wood Duck, 44, 45, 48, 52, 133.
 Pewee, 47, 231.
 Thrush, 45, 46, 47, 311, 313.
 Woodcock, 22, 56, 57, 58.
 American, 166.
 Woodpecker, 68.
 American Three-toed, 224.
 Arctic Three-toed, 224.
 Downy, 237.
 Golden-winged, 226.
 Hairy, 10, 223.
 Northern Downy, 223.
 Northern Pileated, 225.
 Pigeon, 226.
 Red-headed, 225.
 Wood-pigeon, 68.
 Worm-eating Warbler, 10, 287.
 Wren, Carolina, 10, 304.
 House, 72, 304, 317.
 Long-billed Marsh, 43, 44, 45, 46, 47,
 48, 178, 272, 305, 306.
 Marsh, 40.
 Short-billed Marsh, 45, 305.
 Winter, 11, 305.
 XANTHIUM, 33.
 YELLOW Birch, 9.
 Clintonia, 10.
 Palm Warbler, 35, 296.
 Rail, 38, 45, 160.
 Red-poll, 296.
 Red-poll Warbler, 56.
 Warbler, 35, 47, 290.
 Yellow-bellied Flycatcher, 231.
 Sapsucker, 56, 224.
 Yellow-billed Cuckoo, 222.
 Yellow-bird, 252.
 Yellow-breasted Chat, 10, 73, 298.
 Yellow-crowned Night Heron, 10, 158, 319.
 Yellow-leg, Bastard, 168.
 Yellowlegs, 69, 175.
 Greater, 22, 39, 46, 182, 184.
 Lesser, 14, 22, 39, 167, 183.
 Summer, 167, 183.
 Winter, 182, 184, 199.
 Yellow-rumped Warbler, 34, 35, 227, 280, 290,
 294, 309.
 Yellow-throat, Maryland, 298.
 Northern, 28, 34, 35, 45, 46, 47, 48, 298.
 Yellow-throated Vireo, 286.
 Yellow-winged Sparrow, 264.
 ZAMELODIA ludoviciana, 274.
 Zenaidura macroura, 204.
 Zone, Canadian, 10, 11.
 Sub-Canadian, 10.
 Transition, 10.
 Upper Austral, 10.
 Zonotrichia albicollis, 269.
 leucophrys, 269.
 Zostera marina, 37, 245.





MAP OF ESSEX COUNTY, MASSACHUSETTS

county

AMNH LIBRARY
100112331